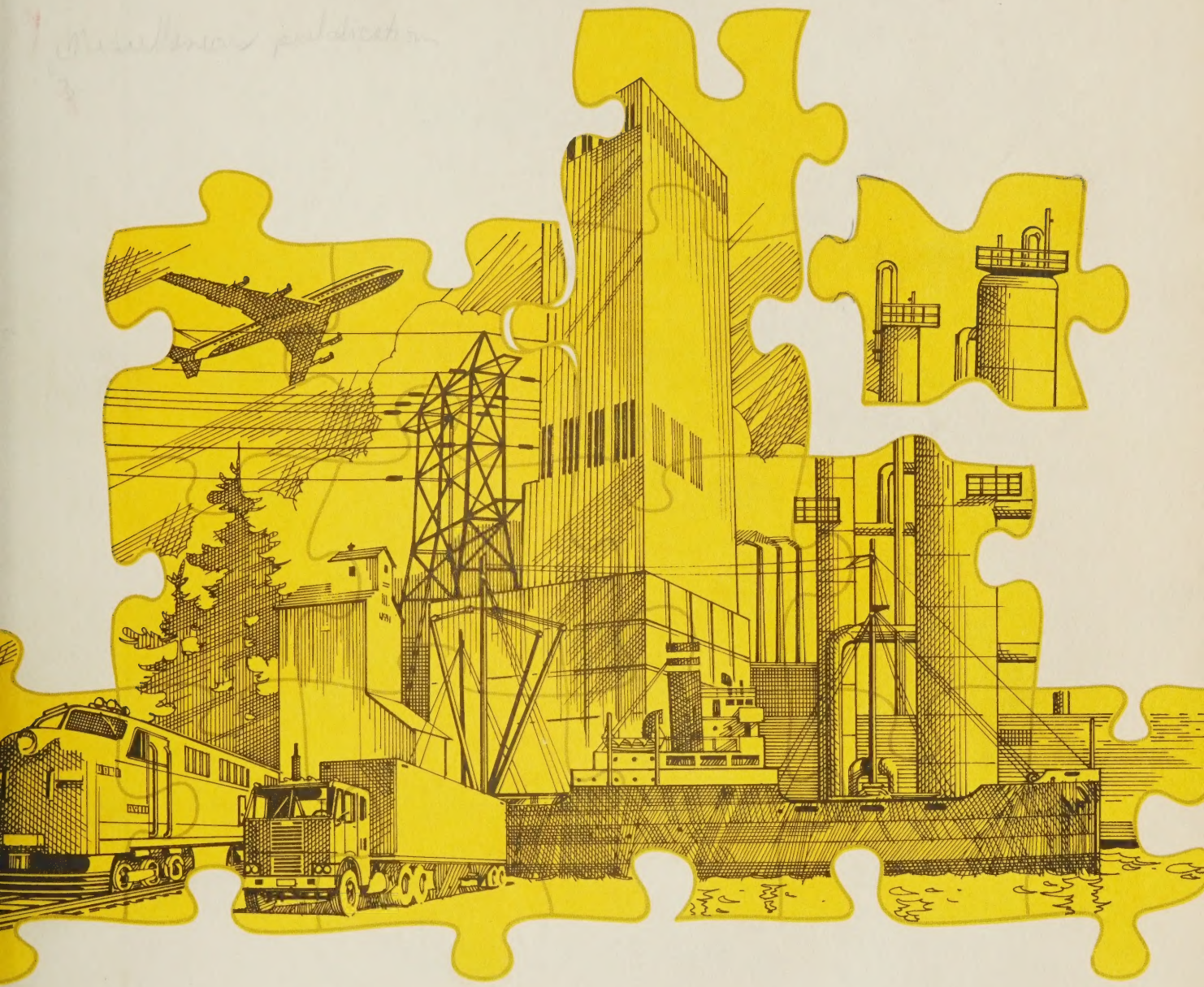
Royal Commission on Corporate Concentration



STUDY NO. 31

Concentration Levels and Trends in the Canadian Economy, 1965-1973

A Technical Report

Royal Commission on Corporate Concentration

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A Technical Report

by

Christian Marfels

Dalhousie University

Halifax, N.S.

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FOREWORD

In April 1975, the Royal Commission on Corporate Concentration was appointed to "inquire into, report upon, and make recommendations concerning:

(a) the nature and role of major concentrations of corporate power in Canada;

(b) the economic and social implications for the public interest of such concentrations; and

(c) whether safeguards exist or may be required to protect the public interest in the presence of such concentrations."

To gather informed opinion, the Commission invited briefs from interested persons and organizations and held hearings across Canada beginning in November 1975. In addition, the Commission organized a number of research projects relevant to its inquiry.

This study by Professor Christian Marfels on concentration levels and trends in the Canadian economy from 1965 to 1973, stems directly from that portion of our mandate which enquired about the "nature and role of major concentrations of corporate power in Canada." The study looks at corporate concentration in its traditional structuralist sense of aggregate statistics for the largest non-financial firms and for major divisions of the economy, and of concentration statistics for industry groups and individual industries. The study also discusses some of the limitations of measurement of concentration statistics, and compares Canadian concentration levels and trends to those in other countries.

Professor Marfels has published widely in North America and in Europe, on the subject of concentration levels and their measurement. He holds a doctorate from the Freie Universitaet Berlin, and is Associate Professor of Economics at Dalhousie University in Halifax.

The Commission is publishing this and other background studies in the public interest. We emphasize, however, that the analyses presented and conclusions reached are those of the author, and do not necessarily reflect the views of the Commission or its staff.

Donald N. Thompson
Director of Research

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List of Symbols

The following symbols are used in this monograph:

..	figures not available
...	figures not appropriate or not applicable
-	nil or zero
--	amount too small to be expressed
x	confidential to meet secrecy requirements of the Statistics Act
$M	millions of dollars
$B	billions of dollars

Preface

The present study was initiated by the Royal Commission on Corporate Concentration in April, 1976, as part of its wide-ranging program to investigate the socio-economic effects of concentration in the Canadian economy. According to the mandate of the Royal Commission, the scope of the study went beyond 'traditional' market boundaries and included divisional and overall concentration. As a consequence, institutional barriers were met with regard to the availability and the quality of concentration data, and the limited time frame did not permit either inclusion of aspects of foreign ownership or the establishment of concentration data in terms of consolidated enterprises on the divisional and on the overall level. Moreover, a balance had to be struck between the extent of detail in the analysis of concentration data and the available time.

Helpful suggestions from Donald N. Thompson, Research Director of the Royal Commission, paved the way for the direction of the study. The rather extensive problems of data collection were generously assisted by various officials of Statistics Canada: Chapters 3 and 4 benefited to a great extent from the advice of Harley D. Potter from the Manufacturing and Primary Industries Division; Brian K. Preston from the Business Finance Division assembled the special tabulations in Chapter 2 and assisted together with Albert A. Dorland and Peter Blitt on interpretations and technical details in corporate financial data; John S. McVey from the Financial Flows and Multinational Enterprises Division prepared the information in Exhibits 15 and 16. Editorial assistance from Hilda Grossert proved highly valuable, and last but not least, the burden of giving final form to the various drafts of the study rested in the skillful hands of Margaret Twiss and Dorisann Everett. I wish to extend my sincere gratitude to all of them. However, any remaining errors are my sole responsibility.

Christian Marfels

Summary of the Main Findings

1. According to the broad mandate of the Royal Commission on Corporate Concentration, in this study concentration is measured on three levels, viz. (i) 'overall' concentration, comprising all non-financial divisions of the Standard Industrial Classification (SIC), (ii) 'aggregate' concentration, relating to concentration on the divisional level for each of the eight divisions of the SIC, and (iii) 'industry' concentration for industry groups and individual industries within the division of manufacturing and mining.

2. The limitations of concentration data as an indicator of competitiveness are mainly governed by the standards set by Statistics Canada. Disclosure rules determine the coverage of at least four firms in a concentration ratio, but this does not necessarily mean that a four-firm ratio will, in fact, be published. Nevertheless, a definite improvement to that end could be observed for the 1965/1972 period. Industry concentration levels are generally overstated inasmuch as foreign trade is omitted, whereas the opposite is true for the vast majority of industries because of the neglect of regional markets. With regard to the data on overall and aggregate concentration, coverage was restricted to the corporate sector of the economy, and concentration levels are understated since no inter-corporate ownership ties could be taken into account.

3. During 1965/1973, the corporate sector of the Canadian economy experienced not only rapid growth in absolute terms but also expanded its territory vis-à-vis unincorporated businesses. Compared to the average annual growth rate of 1.5% for the Canadian population, the corporate population increased by no less than 5.5%. Corporate assets and sales grew by 11.9% and 11.3%, respectively, compared to the average annual growth rate of 10.2% for GNP. Divisional patterns showed Services in

the lead in growth of numbers of corporations and well in front in both asset and sales growth. At the other end of the spectrum, Manufacturing was last in asset and sales growth, and last to Mining only in growth of numbers of corporations.

4. The size distribution of corporations in Canada is lopsided: a vast majority of small corporations with assets of less than $1 M accounts for a minor and declining fraction of corporate assets and sales whereas a few corporate giants with assets in excess of $1 B control considerable and increasing shares of assets and sales. Including the financial sector, 94.2% of all corporations accounted for 10% of assets and 23.9% of sales in 1973, a decline of 4.2 and 7.6 percentage points, respectively, from 1965 levels; on the other hand, only 29 corporate giants (0.02%) held 35.1% of assets and 9.5% of sales, up by 9.6 and 6.3 percentage points, respectively, from 1965 levels.

   With non-financial corporations, the same trends apply: during 1965/1973, corporate giants expanded their territory from 10.2% to 20.5% in assets and from 2.1% to 7% in sales; the share of small corporations dropped from 18.3% to 13.3% with assets and from 31.8% to 25.3% with sales.

5. Asset concentration ratios of the 25 largest non-financial corporations rose by 1.4 percentage points to 25.2% during 1965/1973, and the top-200 approached the 50% mark of Canada's industrial resources with an increase of 1.1 percentage points to 48.3% in 1973.

6. A classification of the eight divisions of the Canadian economy with regard to asset concentration levels and levels of inequality in the size distribution of assets designates Utilities, Finance, and Mining as highly concentrated divisions, and Services and Agriculture/Forestry/Fishing as divisions of low concentration; Manufacturing, Trade, and Construction assumed intermediate levels.

7. During 1965/1972, value-added concentration levels for the four largest manufacturing enterprises showed a slight decline of 0.6 percentage points to 7.1% for value added, shipment concentration increased by 1.3 percentage points to 9.7%, and employment concentration remained unchanged at 5.2%. A consistent increase of concentration can be observed for the 100 largest manufacturing enterprises: value-added concentration increased by 1.3 percentage points to 44.9%, shipment concentration by 1.8 to 47%, and employment concentration by 1.9 to 36.4%.

The importance of diversification in Canadian manufacturing industries can be shown with the so-called 'consolidated' enterprise concept where an enterprise is classified as a whole to the industry that accounts for the largest proportion of its value added. Consequently, only 3% of all enterprises were multi-industry enterprises, but they accounted for almost two-thirds of the total manufacturing value added in 1972.

8. Of the 146 reported manufacturing industries in 1965, four-firm value-of-shipment concentration levels were "high" in 48 industries (32.9%), "medium" in 57 industries (39%), and "low" in 41 industries (28.1%). The corresponding figures for the 155 reported industries in 1972 read 52 (33.5%), 68 (43.9%), and 35 (22.6%).

Highly concentrated industries are mainly found in the following industry groups: Tobacco Products, Rubber Industries, Textiles, Primary Metals, Transportation Equipment, Petroleum and Coal, and Misc. Manufacturing Industries. Low concentration has its domain in Knitting Mills, Clothing, Printing and Publishing, and Metal Fabricating.

9. In order to trace an overall increase or decrease of concentration in manufacturing industries during 1965/1972, levels and trends of enterprise concentration in definitionally comparable industries were

analyzed for 103 industries in terms of four-firm ratios and for 129 industries in terms of Hirschman-Herfindahl indexes. Four-firm concentration levels by concentration decile display an almost identical percentage of industries in low, medium, and high concentration ranges. At the upper end, 34 industries (33%) had a four-firm ratio of more than 60% and 8 industries (7.7%) a ratio of more than 80% in 1972 compared to 32 industries (31.1%) and 12 industries (11.6%), respectively, in 1965. Similar indications for a very slight decline in concentration are obtained with the Hirschman-Herfindahl index: an index of more than 0.25, which may be viewed as 'high' concentration, occurred in 12 industries (9.3%) in 1972 compared to 15 industries (11.6%) in 1965.

A closer inspection of percentage point changes of four-firm ratios by industry during 1965/1972 displays an almost equal distribution in either direction which indicates virtually no change. Changes in Hirschman-Herfindahl indexes followed basically the same pattern; however, there were 12 industries with increases of more than four points (i.e., the differences between two indexes times 100) vs. 19 industries with decreases of more than four points. Again, this may be viewed as a tendency for concentration to decline during 1965/1972.

10. A detailed analysis of the nine largest Canadian manufacturing industries with 1972 industry shipments in excess of $1 B, which altogether accounted for 37% of total manufacturing shipments, lends support to the aforementioned tendency. In six industries, viz. Pulp and Paper Mills, Motor Vehicle Mfrs., Motor Vehicle Parts and Accessories Mfrs., Misc. Machinery and Equipment Mfrs., Petroleum Refining, and Slaughtering and Meat Processors, concentration declined both in terms of concentration ratios and Hirschman-Herfindahl indexes; only two industries, viz. "Sawmills and Planing Mills" and "Dairy Products Industries" showed an increase in concentration, and in "Iron and Steel

Mills" concentration declined in terms of concentration ratios and increased in terms of Hirschman-Herfindahl indexes.

With the exception of "Dairy Products Industries", the divergence between enterprise and establishment concentration widened in all of the aforementioned industries because of an overproportionate decline in establishment concentration levels.

11. Contrary to the findings for manufacturing industries, concentration in mining industries showed a substantial overall increase during the reported 1968/1972 period. High concentration levels appear in "Metal Mines", followed by "Non-Metal Mines", whereas "Quarries and Sand Pits" show a dominance of low concentration.

12. In an international comparison of Canadian concentration levels, the Canada-United States comparison is of primary interest. Available concentration data permit a direct comparison of the manufacturing sector both at the divisional level and at the industry level.

Aggregate concentration levels in Canadian manufacturing are significantly higher than in the counterpart sector of the United States: the 50 largest manufacturing enterprises in the United States held 25% of total manufacturing value added in 1963/1972, whereas in Canada their share increased by 0.2 percentage points to 33.6% in 1965/1972; the corresponding figures for the 100 largest read 33% (no change) for the United States and 44.9% (increase by 1.3 percentage points) for Canada.

Comparison of 1972 four-firm value-of-shipment concentration ratios in the two countries supports findings of previous studies: a percentage distribution of reported concentration ratios by decile brackets shows twice as many industries in Canada in each of the deciles beyond 60%.

13. In order to avoid the somewhat gargantuan task of a full-scale international comparison with concentration data adjusted for conceptual differences, a sample of nine Canadian manufacturing industries with similarly defined counterpart industries in Australia, the F.R. of Germany, France, Japan, Sweden, Switzerland, and the United States was selected. The industries are: Slaughtering and Meat Processors, Breweries, Tobacco Products Mfrs., Rubber Tire and Tube Mfrs., Pulp and Paper Mills, Iron and Steel Mills, Motor Vehicle Mfrs., Cement Mfrs., and Petroleum Refining. A cross-tabulation of four-firm ratios in these industries gave Canada a clear overall lead in terms of high concentration both for 1965 and 1972 (or the nearest year available in a given foreign country). This may serve as a tentative indication of high concentration levels in Canada in international perspective.

Introduction

In the terms of reference of the Royal Commission on Corporate Concentration, particular emphasis is placed on "the nature and role of major concentrations of corporate power in Canada" [50, p.1].[1] A necessary instrument in an evaluation of corporate concentration is its measurement. Traditionally, concentration measurement has mainly focused on concentration in the manufacturing sector in the sense of measuring concentration in individual industries. However, 'industrial' concentration cannot take an exclusive lease of both high concentration levels and being of prime socio-economic importance. On the contrary, concentration in other sectors of the economy such as, *e.g.*, Utilities, Finance, and Wholesale and Retail Trade, assumes astounding magnitudes and, above all, its consequences are more directly felt by the consumers. Moreover, in his Statement on the Royal Commission on Corporate Concentration, the Prime Minister referred to large-scale concentration of economic power, particularly in relation to conglomerate enterprises [16, p.1]. This makes an inclusion of concentration data going beyond conventional market boundaries an absolute necessity.[2] Consequently, concentration in the Canadian economy will be measured on three levels, *viz.*

(i) 'overall' concentration, comprising *all* non-financial divisions[3] of the Standard Industrial Classification (SIC),

(ii) 'aggregate' concentration, relating to concentration on the divisional level for each of the eight divisions of the SIC, and

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[1] Numbers in square brackets refer to the References.

[2] *Cf.* Rosenbluth [48, pp.57-58 n.1], Utton [71], and Penn [43]. *Vid.* an opposing view in Adelman [2]; I am indebted to G. Pickering for bringing this article to my attention.

[3] The financial sector was excluded in order to separate financial from industrial activity. However, the financial sector was included in the discussion of aggregate concentration.

(iii) 'industry' concentration for industry groups and individual industries within the manufacturing sector.[4]

Consequently, this monograph addresses itself first to the scope and limitations in the measurement of concentration. An analysis of special tabulations by Statistics Canada on overall and aggregate concentration follows in the second part with a subsequent discussion of the published concentration data for manufacturing, mining, and logging industries. Finally, a tentative evaluation of Canadian concentration data in international perspective is conducted.

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[4] Strictly speaking, there is no real difference between 'overall' and 'aggregate' (or divisional) concentration except that overall concentration means yet a higher level of aggregation. Thus, the two labels are employed for semantic reasons in the present context [*cf.* 9, p.60].

Chapter 1

Scope and Limitations of Concentration Measurement

Ever since Berle, Means [6] and Mason [40] paved the way for the field of Industrial Organization, concentration has been assigned a dominant role in analyses of market structure, market conduct, and market performance. According to the theory of Industrial Organization, repercussions of concentration as the most important element of the starting link structure are assumed to be strongly reflected in market conduct and in performance. Consequently, concentration as the extent to which an industry approximates competition or monopoly conditions would indicate the likelihood of collusion to be greater in an industry with a small number of leading firms and a 'competitive fringe' of small firms than in an industry with a greater number of firms and with more evenly spread firm sizes [48, p.57]. This was the reason to associate the concept of concentration measurement basically with two measurable criteria, *viz.* number and size distribution of firms or, more specifically, fewness and inequality. This means that the significant area of economic power forming an important part of the complex phenomenon concentration and consisting of mainly qualitative aspects [*cf.* 3] remains untapped.

The restriction to the measurable criteria fewness and inequality links the assessment of the degree to which an industry is structurally competitive to the size distribution of the largest firms. There is a rich choice of alternative measures of concentration which display somewhat similar patterns but with varying degree of emphasis on the importance of large firms in a firm size distribution:[5] summary measures of concentration take *all* firms in an industry into account and, thus, create a tendency

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[5] Formally, concentration measures differ through various weighting schemes of market shares of firms, $p_i [\sum_i p_i = 1]$:

(i) Concentration Ratios: Weights of unity to the shares of a

to level off the structural impact of largest firms whereas discrete measures of concentration reveal a maximum of detail of the largest firms by their exclusive reference to this group. Against the mathematical sophistication of summary measures, simplicity and intuitive appeal have made discrete measures in the form of concentration ratios the reference

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Footnote 5 ctd.

fixed number of top firms

$$CR_m = \sum_{i=1}^{m} p_i \qquad i = 1,....,m,m+1,....,n$$

where the i-th firm receives rank i in a descending rank order.

(ii) Hirschman-Herfindahl index: Shares of the individual firms as weights

$$C = \sum_i p_i^2 \qquad i = 1,...,n$$

(iii) Rosenbluth index: Ranks of firms as weights

$$I = 1/[(2 \sum_i ip_i) - 1] \qquad i = 1,...,n$$

where the i-th firm receives rank i in a descending rank order.

(iv) E-index: Shares of individual firms as weights in a weighted geometric series

$$E = \prod_i p_i^{p_i} \qquad i = 1,...,n$$

which is the reciprocal of the antilogarithm of the well-known entropy measure H,

$$H = \sum_i p_i \log(1/p_i)$$

(v) Horvath index: This index employs a dual weighting system, *viz.* a weight of unity to the share of the largest firm and, for the non-largest firms, shares of the individual firms as weights which are reinforced by a multiplier

$$CICI = p_{max} + \sum_{j=2}^{n} p_j^2(2 - p_j)$$

[*cf.* 39, pp.465-466].

measure in competition policy: concentration ratios are the only measures of market structure which are explicitly or implicitly incorporated in antitrust laws and which are published on an official basis.

Concentration ratios express the percentage of total business activity (overall concentration), of divisional activity (aggregate concentration), or market activity (industry concentration) accounted for by a fixed number of largest firms. This 'discreteness' of concentration ratios, *i.e.* the reference to one single point of the concentration curve as their underlying geometric device, has created a number of problems.

The selection of this point is directed in terms of Census disclosure rules rather than economic reasoning. Accordingly, disclosure of information on individual firms is forbidden.[6] Statistics Canada has interpreted disclosure as covering at least four firms in a concentration ratio.[7] Reluctantly, this policy has been adopted by economists for matters of convenience and comparison.[8] However, there is no guarantee that a top-4 ratio will, in fact, be published. A tabulation of unpublished top-4 and/or top-8 ratios in Exhibit 1 shows that Statistics Canada did not publish top-4 ratios in 14% and 9% of the covered manufacturing industries in 1965 and 1972, respectively, an improvement compared to 1965 but a deterioration compared to 1968 (4%) and 1970 (5%). Not counting the obvious 'disclosure cases' where there are less than seven firms in an industry altogether, the reasons for this extended application of confidentiality must be sought in the likelihood of potential disclosure

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[6] The only exception is Japan where concentration ratios are published for the largest firm and, subsequently, for the three, five, and ten largest firms [*cf.* 28; 30; 31].

[7] By comparison, the F. R. of Germany and Switzerland publish three-firm ratios, France, Sweden, and the United States four-firm ratios; the United Kingdom has published five-firm ratios from 1963 onwards (*vid. infra*).

[8] The published concentration-ratio sequence of Statistics Canada for industry concentration in the manufacturing sector reads: 4, 8, 12, 16, 20, and 50; for aggregate concentration, the sequence includes 25 and 100. In order to obtain meaningful results, the respective sequence for overall concentration was adjusted in the request for special tabulations to 25, 50, 100, and 200 (*vid. infra*).

Exhibit 1. Number of Reported Industries and Number of Industries with Missing Four-Firm Ratios (CR_4) and/or Eight-Firm Ratios (CR_8), 1965-1972

Year	All Rep. Industries	CR_4 Missing	of which: Disclosure Cases[a]	of which: Major Industries[b]	CR_8 Missing	of which: Disclosure Cases[a]	of which: Major Industries[b]	CR_4 and CR_8 Missing	of which: Disclosure Cases[a]	of which: Major Industries[b]
1965	159	22	2	4	19	3	3	10	-	2
1968	171	7	2	1	6	6	1	1	1	-
1970	172	9	3	1	11	6	3	4	-	-
1972	171	16	2	4	5	5	2	-	-	-

a) Less than three enterprises remaining.
b) Industries with manufacturing value added of more than $100 M.

Sources: Statistics Canada [56, Tables 1 and 2; 57, Table 1; 58].

from cross-reference publications.[9] This is certainly an overly cautious application of disclosure rules which, hopefully, will be modified. A definite improvement can be noticed from Exhibit 1 inasmuch as there were no industries in 1972 where both top-4 and top-8 ratios were missing as compared to 10 industries in 1965.

Disclosure rules have yet a further and more serious impact on the interpretation of a concentration ratio as an indicator of an industry's structure. The cumulation of market shares in a top-4 ratio means a disguise of dominant firms, and it may lead to misinterpretations in inter-industry and intertemporal comparison. Two examples may illustrate this point. Suppose two industries show a top-4 ratio of 70% each but in one of them the leading firm has 50% and the three remaining firms 10%, 5%, and 5%, whereas in the other industry three firms have 20% and one has 10%. Despite the lopsided size distribution in the first industry, the two industries would have to be treated as showing equal levels of concentration since the dominance is not reflected in the top-4 ratio. The 50%-share was picked on purpose: in 1972, there were five manufacturing industries in Canada where the leading firm accounted for 50% and more of the industry's manufacturing shipments.[10] Suppose in another example that in an industry the top-4 ratio is 60%, the top-8 ratio 70%, and the top-20 ratio 80%; after 20 years have passed, the respective ratios read 50%, 75%, and 80%.[11] Consequently, in an evaluation of concentration trends the question of whether concentration has increased or decreased cannot be answered unequivocally. The two examples reveal the deficiency of a concentration ratio in not reflecting the full structure among the largest firms considered. In addition, the presence of non-largest firms

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[9] According to information from the Manufacturing and Primary Industries Division of Statistics Canada, disclosure of value-of-shipment concentration ratios is felt to be imminent from the separate publication of establishment *size distributions* by value of shipments whenever the top-4 establishments in an industry are, in fact, the top-4 enterprises [55].

[10] This figure was communicated by the Manufacturing and Primary Industries Division of Statistics Canada.

[11] This example is attributed to J. S. Bain and is quoted from Kamerschen [33].

is ignored by a concentration ratio: when, for example, the four largest firms have 60%, there is no indication of whether there are 10 or 100 (non-largest) firms left sharing the remainder which, in itself, may have significant effects on the competitiveness of an industry.[12] However, despite the aforementioned deficiencies there can be no doubt that concentration ratios represent a highly useful device to assess market power. The case for concentration ratios gains momentum from a pragmatic point of view when merits and demerits of 'competing' summary measures of concentration are taken into account.[13]

Reference was made to concentration ratios reflecting the degree to which markets are structurally competitive. In order to do so, foreign trade and especially competition from imports has to be taken into due account. However, the concentration ratios published by Statistics Canada exclude foreign trade and, thus, in a way pretend that Canada is a closed economy. Now, Canada is as open as a country can be: in 1972, foreign trade[14] as percent of the gross national product was 21.2, up by 5.5 percentage points from 1960 levels. This compares to 16.9 for the F. R. of Germany, 8.7 for Japan, and 4.6 for the United States in 1972 (*vid.* Table 1. Thus, it is obvious that the adjustment of concentration ratios for foreign trade is of particular importance for Canada.[15] In many industries, concentration ratios are slightly overstated insofar as

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[12] For proposals for a multi-dimensional measurement of concentration refer to Fellner [23] and Marfels [37].

[13] *Cf.* Shepherd [52, pp.104-105]. Since there is no single, ideal measure of concentration Statistics Canada has adopted the commendable position of publishing both concentration ratios and--as a summary measure of concentration--Hirschman-Herfindahl indexes (*vid. infra*). This way, a (partial) solution to the problem of the withheld top-4 and/or top-8 ratios has been found since, *per definitionem*, summary measures of concentration are not affected by disclosure rules.

[14] Average one-way trade, *i.e.* one half of the sum of imports and exports.

[15] With particular reference to market conditions in Atlantic Canada, the Atlantic Provinces Economic Council has criticized the applicability of concentration ratios severely with respect to the omission of imports and to the non-recognition of industries being regional in character [*vid.* 4, pp.1-2].

exports are still included whereas the exclusion of imports overstates concentration levels significantly: whenever reference is made to "market shares" under these conditions, this means production or shipment shares only.[16] Consequently, concentration ratios should be adjusted accordingly in order to reflect apparent supply. Obviously, the inclusion of imports has a far greater impact on concentration levels than the exclusion of exports [*cf.* 53, pp.165-166]: a fictitious example in Exhibit 2 with an extremely high export share of the four largest firms reveals that imports accounted for the overwhelming portion of the total bias of excluding foreign trade. Unfortunately, it is very difficult to adjust the published 'production' ratios retroactively to genuine 'market' ratios reflecting the apparent supply since concentration ratios are industry-based whereas foreign trade data are commodity-based.[17] As an illustrative example, the steel industry may be indicative for the impact of foreign trade on concentration levels. In Exhibit 3, four-firm concentration ratios for the steel industries of Canada, the F. R. of Germany, Japan, and the United States are presented at various levels of operation. The figures at the "Total Steel Shipments" level represent the equivalent (in physical terms) of the published concentration ratios in each of the four countries. As can be seen, the transition to the "Apparent Supply" level means a rather substantial *reduction* in concentration levels (in percentage points):

	Canada	F.R.G.	Japan	U.S.
1960	19.8	6.2	3.2	5.1
1970	12.7	17.5	3.6	13.2

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[16] Formally, concentration ratios (CR) excluding and including imports (I) and exports (E) are as follows:

(i) $CR_4^P = P_4/P$ — Four-firm concentration excluding foreign trade (P = production or shipments)

(ii) $CR_4^M = (P_4 - E_4)/(P + I - E)$ — 'True' four-firm concentration including foreign trade (apparent supply)

[17] For a pioneering attempt for U.S. manufacturing industries refer to Shepherd [52, pp.107, 263-267].

Exhibit 2. Fictitious Example: Total Shipments, Domestic Shipments, Exports, and Imports in an Industry, by Volume of Shipments

Firm	Total Shipments	of which: Domestic Shipments	Exports
A	50	40	10
B	40	32	8
C	30	24	6
D	20	16	4
E	10	8	2
F	5	4	1
G	3	3	-
H	2	2	-
	160	129	31

Imports: 40.

Four-Firm Concentration when Excluding Foreign Trade: $CR_4^D = (140/160)100 = 88$

Four-Firm Concentration in Terms of Apparent Supply: $CR_4^M = [(140-28)/(160-31+40)]100 = 66$

Four-Firm Concentration in Terms of Domestic Shipments: $CR_4 = (112/129)100 = 87$

Overstatement of Concentration Levels when Excluding Foreign Trade: 22 percentage points.

Exhibit 3. Market Shares of the First Four Steel Companies in Four Countries by Tonnage of Steel Produced and Shipped by Level of Operation, 1960 and 1970[a]

Canada		Federal Republic of Germany		Japan		United States	
1960	1970	1960	1970	1960	1970	1960	1970
Steelmaking Capacity							
83.4	81.2	33.7	56.9	55.5	72.6	57.7	53.1
Crude Steel Production							
91.2	83.5	34.8	58.5	57.7	73.3	57.1	53.3
Total Steel Shipments							
87.2	79.5	29.6	50.1	51.8	69.0	56.0	52.6
Domestic Steel Shipments							
85.9	80.0	27.1	41.1	49.4	65.5	53.4	45.7
Steel Exports							
94.9	76.4	28.9	46.3	67.9	79.4	59.2	52.5
Apparent Supply[b]							
67.4	66.8	23.4	32.6	48.6	65.4	50.9	39.4

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a) Intercorporate ownership has not been taken into account.
b) Total Shipments + Imports - Exports = Domestic Shipments + Imports.

Sources: (i) Numerator of concentration ratios:
Correspondence with steel producers in each of the four countries (approximately 250 companies).
(ii) Denominator of concentration ratios:
Canada: Manufacturing and Primary Industries Division, Statistics Canada, Ottawa.
F.R. of Germany: Wirtschaftsvereinigung Eisen- und Stahlindustrie, Düsseldorf.
Japan: Japan Iron and Steel Institute, Tokyo.
United States: American Iron and Steel Institute, Washington.

Consequently, the 'true' four-firm ratio reflecting the impact of foreign trade in the steel industry of Canada in 1970 would have stood at 67% instead of 80%. It can be safely assumed that the *overstatement* of published concentration ratios will be an increasing function of the degree of 'import-orientation' of an industry.

The opposite impact on concentration ratios can be expected for industries representing commodities with separate regional or even local submarkets. Since the published concentration ratios refer to the national market as a whole, there exists a more or less marked *understatement* of 'real' market conditions in these industries. Not surprisingly, the pioneering study by the Department of Consumer and Corporate Affairs--which, unfortunately, has not been continued by Statistics Canada with respect to regional concentration ratios--concluded that "In almost all cases, the regionally weighted national concentration ratios are considerably greater than the corresponding unweighted national concentration ratios" [12, p.40].[18] The determinant factor in the formation of distinct regional and local submarkets is transportation cost. According to estimates by Scherer, the most prominent example is cement with 30.4 cts. of transportation cost per dollar of product value; other commodities with high transportation cost are glass bottles (9.9 cts.), petroleum products (8.9 cts.), beer (7.8 cts.), and steel mill products (7.5 cts.) [51, p.90]. Although high transportation cost does *not necessarily* confine commodities to regional markets, there are commodities which, by their very nature, usually are confined to much narrower markets than the nation as a whole; among them are milk, bread, and newspapers [52, p.106; 4].

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[18] Of a total of 154 reported manufacturing industries, 34 industries were characterized as regional of which, in turn, 18 could be analyzed [12, pp.37-40]. The U.S. Bureau of the Census tabulated regional concentration ratios for 1958 and for 1963 [69; 70]. For 1958, four-firm value-of-shipment concentration ratios were provided for 29 4-digit manufacturing industries by Census Geographic Division and State; for 1963, the scope was expanded to 62 industries by Census Geographic Division, Census Region, and Standard Metropolitan Statistical Area. For 1966, Shepherd has estimated the 'regional impact' on concentration ratios for the United States [52, pp.107, 263-267].

Based on the Census of Manufacturers, the concentration data of statistics Canada for the manufacturing sector employ the "enterprise" comprising all establishments under common majority control as the tabulating unit. Unfortunately, it was not possible to have the special tabulations of overall and aggregate concentration based on this definition of the enterprise. Rather, the tabulating unit was the single corporation filing a T2 tax return with basically unconsolidated asset and sales data and, thus, excluding wholly-owned and majority-owned subsidiaries filing separate returns (*vid. infra*). Consequently, to the extent that parent corporations and subsidiary corporations are treated as separate entities, the resultant concentration ratios are understated. The degree of *understatement* is difficult to assess,[19] but it may not be as high as it is sometimes assumed to be.[20] As a general rule, the impact of the majority control aspect on concentration levels will be a decreasing function of the level of aggregation, *i.e.* it will be felt least on the overall level. To provide a realistic example, four-firm concentration ratios for the steel industry in the F. R. of Germany excluding and including intercorporate majority ownership at various levels of operation are presented in Exhibit 4. At the "Apparent Supply" level, *e.g.*, the four-firm concentration level was raised by more than 11 percentage points when including subsidiaries in 1960 and by more than 5 percentage points in 1970.[21]

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[19] For a sample of well-known parent-subsidiary relations in Canada *vid.* The Financial Post [24, p.48].

[20] According to estimates by Müller and Hochreiter for conditions in the F. R. of Germany for 1968, the retroactive inclusion of consolidations in aggregate concentration in the manufacturing sector had only little impact on concentration levels [42, p.118 n.2].

[21] The drastic discrepancy in 1960 was caused by consolidations within the Thyssen-Group and the Krupp-Group. This can be seen from a synoptic comparison of 1960 and 1970 consolidations, respectively, within the two aforementioned Groups in terms of the respective shares in the crude steel production of the F. R. of Germany:

Footnote 21 ctd.

		1960	1970
(i)	Thyssen-Group	21.4	27.9
	August-Thyssen-Hütte AG (ATH) (100% Family Thyssen)	9.4	24.1[a]
	Phoenix-Rheinrohr AG (52.2% Family Thyssen)	9.5	...
	Niederrheinische Hütte AG (96% ATH)	1.3	-[b]
	Deutsche Edelstahlwerke AG (94.4% ATH)	1.3	1.2
	Hüttenwerk Oberhausen AG (98.3% ATH)[c]	...	2.5

[a] Including "Phoenix-Rheinrohr AG" which was absorbed in 1963.

[b] No crude steel production.

[c] Acquired in 1968.

		1960	1970
(ii)	Krupp-Group	11.4	9.3
	Hütten- und Bergwerke Rheinhausen AG (HBR) (100% Family Krupp)[a]	6.8	...
	Bochumer Verein für Guszstahlproduktion AG (76% HBR)	4.6	...

[a] The "Fa. Fried. Krupp" (sole proprietorship) changed to "Fried. Krupp GmbH" (corporation) in 1968.

Sources: *vid.* Exhibit 4.

Exhibit 4. Market Shares of the First Four Steel Companies in the Federal Republic of Germany without and with Intercorporate Majority Ownership Ties (I.M.O.), by Tonnage of Steel Produced and Shipped, by Level of Operation, 1960 and 1970

	1960		1970	
	Without I.M.O.	With I.M.O.	Without I.M.O.	With I.M.O.
Steelmaking Capacity	33.7	48.9	56.9	60.6
Crude Steel Production	34.8	50.1	58.5	62.7
Total Steel Shipments	29.6	51.5	50.1	60.6
Domestic Steel Shipments	27.1	46.7	41.1	50.5
Steel Exports	28.9	44.6	46.3	58.1
Apparent Supply[a]	23.4	34.6	32.6	38.0

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a) Total Shipments + Imports - Exports = Domestic Shipments + Imports

Sources: Exhibit 3; Commerzbank [19]; Stahl und Eisen [54, p.1618]; Koubek [35].

Chapter 2

Overall and Aggregate Concentration in the Canadian Economy, 1965-1973

21. Description of the Data

211. Coverage

The analysis of overall and aggregate concentration is conducted for the corporate segment of the Canadian economy. This restriction is based on grounds that the available financial statistics from T2 tax returns relate to corporations only. Returns of unincorporated businesses such as sole proprietorships, partnerships and self-employed persons are not included. However, the incomplete coverage of the business sector does not have a material influence on the analysis of concentration levels. Unincorporated businesses, although large in number, are relatively unimportant in terms of business activity, with the exception of Agriculture/Forestry/Fishing and, to a certain extent, Services, as can be seen from Table 2. Yet, even in the aforementioned divisions one can safely assume that unincorporated businesses will not be represented in the larger and largest size classes. Thus, concentration ratios based on corporate data are to be regarded as maximum estimates of the 'true' level of concentration in this respect since unincorporated businesses are omitted in the denominator of a concentration ratio. The potential bias is not substantial[22] and may be very well offset by biases in the opposite direction (*vid. infra*).

The basic data source for the corporate universe in Canada are the annual publications of the "Corporations and Labour Unions Returns Act" (CALURA) for corporations [61] and "Corporation Financial Statistics" [60].[23]

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[22] Estimates for the manufacturing sector of the United States have shown that asset concentration for all businesses is about 1-2 percentage points below the comparable figure for corporations [*cf.* 68, p.173].

[23] Unless otherwise specified, the following description refers to 'Corporation Financial Statistics'.

The statistics are based upon the unstructured financial statements[24] filed by corporations with T2 tax returns, and they comprise all active corporations operating in Canada, *i.e.* including foreign-owned corporations. For further technical details regarding sampling methods and reporting period, the reader is referred to the respective sections of the aforementioned publications.

Among the major exclusions are credit unions (SIC 716), caisses populaires (SIC 717), foreign business corporations (SIC 765),[25] and insurance carriers (SIC 771, 772, 775, and 776).[26] For years prior to 1971, federal, provincial, and municipal crown corporations as well as co-operatives were excluded also. In 1970, these exclusions represented approximately 16.7% of the assets of all corporations [60, 1970 e., p.33].[27]

212. Classification

Where a corporation as the financial entity of one or more establishments has several establishments engaged in different industries and/or divisions, it is assigned to the division of the establishments that account for the principal share of the "census value added" [60, 1970 e., p.36].

In addition to overall figures for all industries, at the highest level of aggregation financial statistics for corporations are presented for the following nine industrial divisions of the 1960 Standard Industrial Classification Code (SIC):

1. Agriculture/Forestry/Fishing (SIC 001-047)
2. Mining (SIC 051-099)
3. Manufacturing (SIC 101-399)

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[24] There is no required format for the financial statements of a corporation; rather, the statements follow the pattern used by the individual corporation's accounting system. Moreover, the statements are on an unconsolidated basis except for the inclusion of unincorporated subsidiaries.

[25] Corporations with no assets and sales in Canada but registered in Canada.

[26] For a complete listing of all exclusions, the reader is referred to the 1960 Standard Industrial Classification Code at the end.

[27] The aforementioned major exclusions in the financial sector amounted to almost 10% of all corporate assets in Canada in 1971 [60, 1970 e., p.31].

4. Construction (SIC 404-421)
5. Utilities, including Transportation, Storage, Communication, and Public Utilities (SIC 501-579)
6. Wholesale Trade (SIC 602-629)
7. Retail Trade (SIC 631-699)
8. Finance (SIC 711-793)
9. Services (SIC 801-899)

For practical purposes, "Wholesale Trade" and "Retail Trade" have been combined into one division, "Trade", in the present report. In Table 3, the main SIC categories have been summarized synoptically. Also, a complete listing of all SIC groups may be found in the Appendix.

213. Measures of Business Activity

Financial data for corporations are published by asset size of corporations for a wide range of financial indicators. Tabulations are available from 1968 onwards and are presented in seven asset size groups up to $100 M and over. For reasons of operationality, assets and sales were selected as representative measures of corporate size since other available criteria such as profits, equity, etc., are rarely if ever used in concentration analyses.

"Assets" consist of current assets, net fixed assets and other assets. "Sales" for non-financial corporations are defined as gross revenues from non-financial operations; for financial corporations, the definition of sales is extended to include gross revenues from financial operations as well, *i.e.* sales are equated with total income [61, 1973 e., pp.89-90]. These definitions are employed in Tables 4 and 7. However, it should be noted that the broad definition of sales for non-financial corporations varies from division to division inasmuch as it includes income categories in one division that are excluded in other divisions, and *vice versa*.[28] In order to secure a consistent comparison of sales in non-financial divisions, a narrower definition of sales from available data for 1968

[28] There are some 10 income categories specified in order to arrive at total income [60, 1970 e., pp.47-48].

and later years was employed in Table 5 where "sales" include sales from products and services only.[29] Furthermore, asset size groups in Table 5 from 1968-1973 have been condensed from the original seven groups to four groups in order to facilitate comparison.

It should also be noted that the respective universe totals in Tables 4, 5, and 7 do not coincide since both CALURA statistics for corporations and "Corporation Financial Statistics" have undergone independent reclassifications and revisions, especially for years prior to 1970. *Cum grano salis*, the same reasoning applies to the special tabulation of the largest corporations by asset size which was compiled retroactively (*vid. infra*). Thus, the Tables represent a consistent series in themselves but should not be used cross-wise.

214. Background of the Special Tabulations

Comparable concentration data on the overall and on the divisional level in historical perspective do not exist for the Canadian economy except for some scattered information, mainly for the division of manufacturing [*cf.* 63; 12; 56; 57; 58].

A consistent series of concentration data could not be established prior to 1965. For this year, data on corporations by asset size and by division were available from the CALURA statistics for corporations as presented in the 1965 Concentration Report of the Department of Consumer and Corporate Affairs [12, p.14]. From 1968 onwards, these asset size data have been published annually in "Corporation Financial Statistics" (*vid. supra*).[30] A major deficiency of the published data by asset size of corporations is the fact that the highest size class of "$100 M and over" is somewhat unrealistic for purposes of concentration analysis inasmuch as it conceals the position of the largest corporations. This is especially

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[29] In 1970, sales from products and services by non-financial divisions accounted for some 96% (median) of total income [60, 1971 e., p.22].

[30] Since 1968, data by asset size of corporations have also been published in the CALURA statistics for corporations with the highest asset size group of "$25 M and over".

true for the overall level but it applies also to larger divisions such as Finance and Manufacturing. For that reason a special tabulation was requested from the Financial, Taxation, and General Research Section of the Business Finance Division of Statistics Canada to have the highest asset size group split into three groups up to "$1 B and over".

Whereas information by size class is a useful tool in concentration analysis for the determination of inequality among firms and for the comparison of magnitudes in intertemporal and interindustry perspective, the concept of concentration of economic power is more intuitively connected with an absolute number of largest firms accounting for a certain share of total business activity, rather than with size groups. This means that a cross-section comparison of fixed numbers of largest firms is more meaningful than that of fixed classes with varying numbers of largest firms. Therefore, a special tabulation was requested from the Financial, Taxation and General Research Section of the Business Finance Division of Statistics Canada securing information on the 25, 50, 100, and 200 largest non-financial corporations by asset size in terms of their shares in total corporate assets and their corresponding shares in total corporate sales. The exclusion of the financial division was done on grounds of separating industrial from financial activity. Similarly, a request for compilation of concentration ratios for the 4, 8, 20, 50, and 100 largest corporations by asset size in terms of corporate assets and corresponding corporate sales within each of the eight divisions was directed to the aforementioned section of the Business Finance Division of Statistics Canada. For reasons of operationality, the analysis of aggregate concentration was restricted to the divisional level rather than descending to major industrial groups, an analysis that will be conducted later, however, in the section on industry concentration within the division of Manufacturing (*vid. infra*).

The reporting and tabulating unit in the "Corporation Financial Statistics" from which both concentration ratios and size class data were compiled is the single corporation as a legal entity on an unconsolidated

basis [60, 1971 e., pp.36 37]. Consequently, the resulting concentration ratios are to be treated as minimum estimates of the 'true' level of concentration.[31]

In compiling the data, confidentiality rules were applied by Statistics Canada in order to avoid disclosure of information on individual corporations. Because of the high level of aggregation this did not apply to the concentration ratios, but it did for size class data whenever there were less than four corporations in the respective highest size class or whenever the cumulative totals of (i) size class data and (ii) concentration ratios would disclose individual data. In order not to unduly restrict information, estimate figures were calculated in these cases and are presented in Tables 5 and 7. In cases where there were less than three corporations left in the respective size class, the estimate figure and the figures in the preceding size class were rounded to strike a balance between disclosure and restriction of information.

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[31] The quarterly report on "Industrial Corporations--Financial Statistics" [59] works on a 'semi-consolidated' basis inasmuch as it 'encourages' the submission of consolidated financial data, *i.e.* a parent company may file *one* report including all of its Canadian subsidiaries [59, First Quarter, 1976, p.8]. The sample survey includes corporations in Mining, Manufacturing, Utilities, Trade, and Services; within these divisions, major exclusions are co-operatives, non-profit corporations, personal corporations, and crown corporations [59, First Quarter, 1976, pp.7-8]. Apart from the limited coverage of the industrial universe, the limited time frame for the present study did not permit having compilations done by the Industrial Corporations Section since the data are not available in machine-readable form; rather, data would have had to be assembled manually from a universe consisting of corporations with net assets in excess of $5 M. It was also doubtful whether a consistent series for the entire period under consideration or even part thereof could have been established.

A program is at present underway in the CALURA Subdivision of the Business Finance Division of Statistics Canada to provide enterprise profiles in addition to intercorporate ownership as was provided in the past. Results may be expected some time during the Summer of 1977. Data for 1975 will be published this way [61] but data for 1973 and 1974 will be on tape for public use.

The aforementioned special tabulations were prepared for the years 1965, 1968, and 1973. The selection of these years was governed by the availability of data rather than on economic grounds: 1965 and 1973 are the earliest and the latest years, respectively, for which information by asset size classes is available and 1968 as the intermediate link is the first year for which data by asset size have been published in the enlarged format of "Corporation Financial Statistics". The time period from 1965-1973 may very well be viewed as being too short for a meaningful analysis of trends of overall and aggregate concentration; however, it can serve as a first step in the direction of intertemporal analysis, a procedure that it is hoped could be extended back as far as the late 1940s or the early 1950s at a later stage. For the time being, respective concentration trends in the United States may be indicative of similar trends that may have prevailed in Canada. Therefore, these concentration trends are presented later in order to allow for potential comparison in truly historical perspective (*vid. infra*).

As mentioned earlier, there are exclusions from the coverage of the corporate sector which also applied to the special tabulations. None of the three years includes credit unions (SIC 716), caisses populaires (SIC 717), foreign business corporations (SIC 765), and insurance carriers (SIC 771, 772, 775, and 776) (*vid. supra*). Temporary exclusions affect the comparability of the data to some extent, especially in the division of Utilities: 1965 and 1968 do not include crown corporations that did not file T2 returns, 1968 does not include co-operatives, whereas 1973 includes both categories. For 1968, the latter exclusions amounted to some 12% of the assets of all non-financial corporations, the majority of which, *i.e.* 9%, was accounted for by the part of the public utilities that had been excluded [61, 1969 e., p.67].

To summarize the limitations of concentration ratios in this section, concentration levels are *overstated* (concentration ratios as maximum estimates of the 'true' level of concentration) since (i) unincorporated businesses are omitted, (ii) exports are included (sales concentration only), and (iii) imports are excluded (sales concentration only). On

the other hand, concentration levels are *understated* (concentration ratios as minimum estimates of the 'true' level of concentration) since (i) corporations are on an unconsolidated basis and are not combined to ownership complexes according to majority control, and (ii) regional concentration could not be taken into account. The effect of temporary exclusions (which mainly affect Utilities) and of the permanent exclusions (Finance affected only) will most probably have led to an *understatement* of concentration levels.

22. Overall Concentration in the Canadian Economy

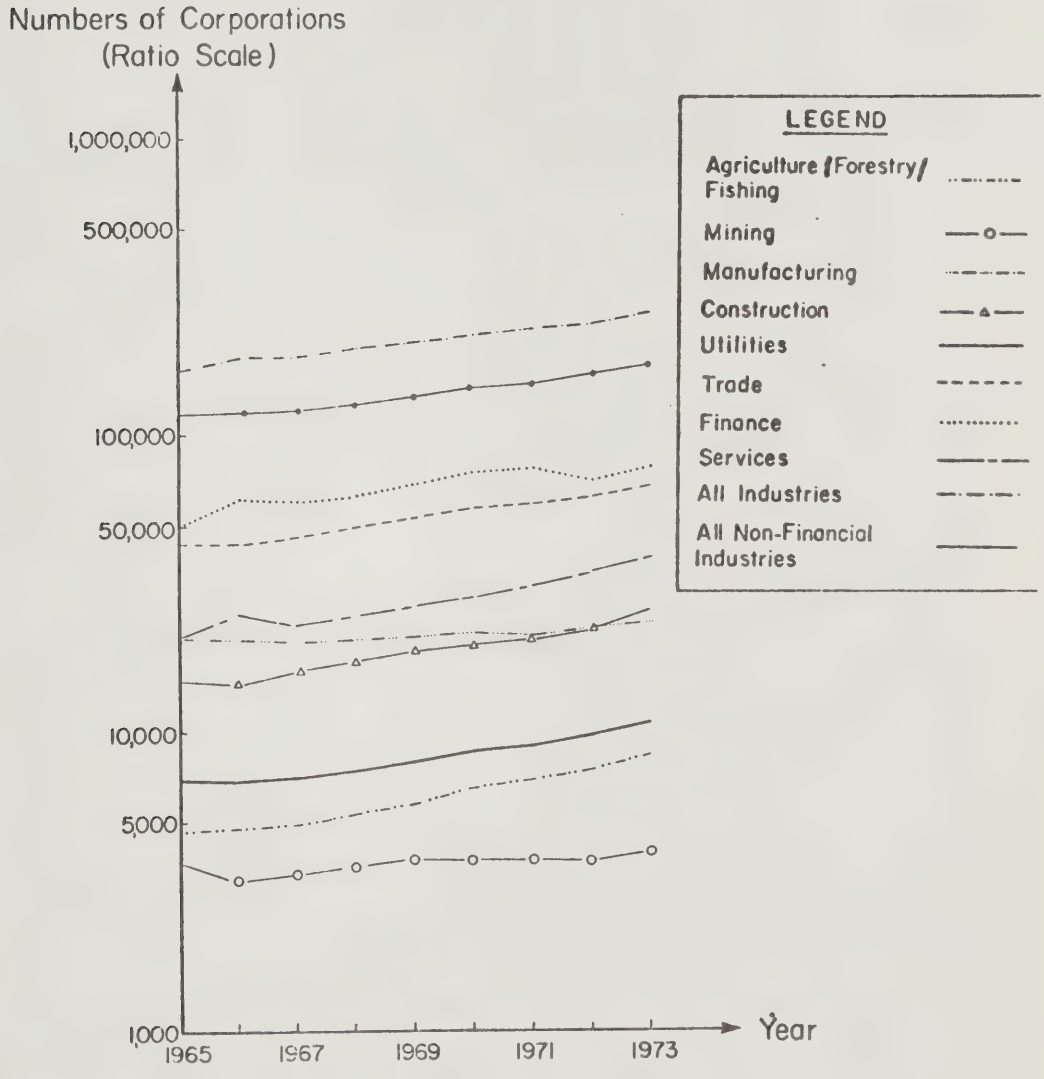
From the early institutionalists at the turn of this century to A. A. Berle and G. C. Means and, finally, to J. K. Galbraith, economists and social critics have pointed to a model of modern industrial organization that can be labeled as the "corporate economy". The focal point in this model is the upward trend of concentration, *i.e.* the gradual shift of business activity towards giant corporations. What does the statistical evidence show for the Canadian economy for the past decade?

221. Statistical Profile of the Corporate Population

In 1965, there were 167,900 active profit-seeking corporations in Canada. By 1973, this number had increased to 258,500, an increase of 54% at an average annual growth rate of 5.5% (*vid.* Table 4). During the same period, the human population in Canada had grown by 12.5% at an average annual growth rate of 1.5% [13, p.108]. This means that the ratio of one corporation for each 117 persons in 1965 had decreased to a ratio of one corporation for each 85 persons in 1973.

As can be seen from Chart 1, the upward trend in the *numbers of corporations* prevailed for all of the eight divisions of the Canadian economy but with marked differences in terms of the average annual growth rates. With the aforementioned rate of 5.5% serving as an indicator of dividing rapid from moderate and slow growth, growth rates varied as follows with the classifications serving purely illustrative purposes:

Chart 1. Numbers of Corporations in Various Divisions of the Canadian Economy, 1965-1973



Source: Table 4.

Rapid Growth	Moderate Growth	Slow Growth
Services (7.7%)	Trade (5.4%)	Manufacturing (1.5%)
Agriculture/Forestry/ Fishing (7.6%)	Utilities (5.3%)	Mining (0.2%)
Construction (6.8%)		
Finance (6.0%)		

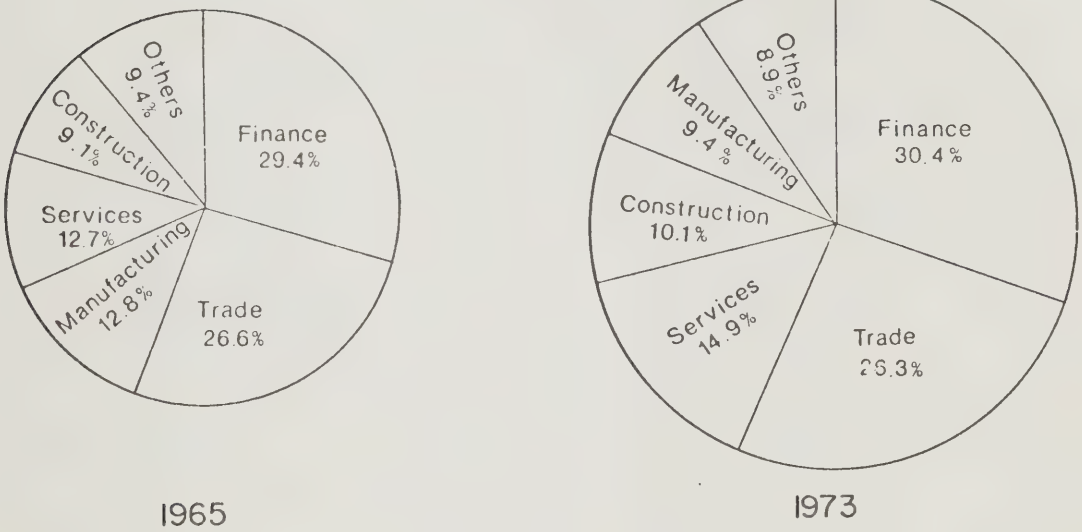
Charts 2 and 3 display the impact of the varying growth rates on the divisions' shares in numbers of corporations: for all industries, Finance has the clear lead, followed by Trade, whereas Manufacturing dropped back from third to fifth place in 1965/1973. The same ranking applies for non-financial industries, where Trade accounts for more than one-third and Services for more than one-fifth of all non-financial corporations.

Impressive as the trends in numbers of corporations may be, in terms of numbers corporations represent a minority among the total business population in all divisions except for Finance and Manufacturing (*vid.* Table 2). However, the overwhelming position of the corporate sector becomes evident with the application of financial measures such as assets or sales.

Corporate assets grew from $145 B to $356 B in 1965/1973, an increase of 146% at an average annual growth rate of 11.9% (*vid.* Table 4). By contrast, the Canadian gross national product at market prices increased by 117.5% at an average annual growth rate of 10.2% during the same period [13, p.115]. Thus, corporate assets were ahead of the GNP by 1.7 percentage points annually. The general upward trend in corporate assets by divisions is shown in Chart 4. Again, substantial differences in the average annual growth rates by divisions can be observed:

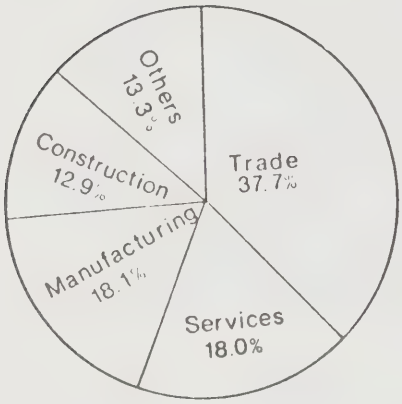
Rapid Growth	Moderate Growth	Slow Growth
Utilities (16.0%)	Mining (11.5%)	Manufacturing (7.8%)
Services (15.0%)	Trade (11.3%)	
Agriculture/Forestry/ Fishing (12.9%)		
Construction (12.6%)		
Finance (12.5%)		

Chart 2. Relative Importance of Various Divisions of the Canadian Economy: Numbers of Corporations, All Industries, 1965 and 1973

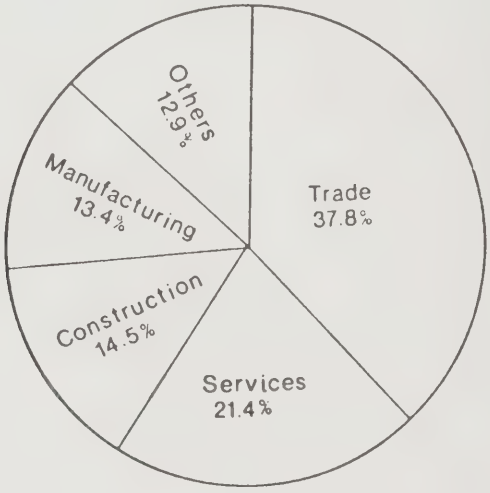


Source: Table 4.

Chart 3. Relative Importance of Various Divisions of the Canadian Economy: Numbers of Corporations, All Non-Financial Industries, 1965 and 1973



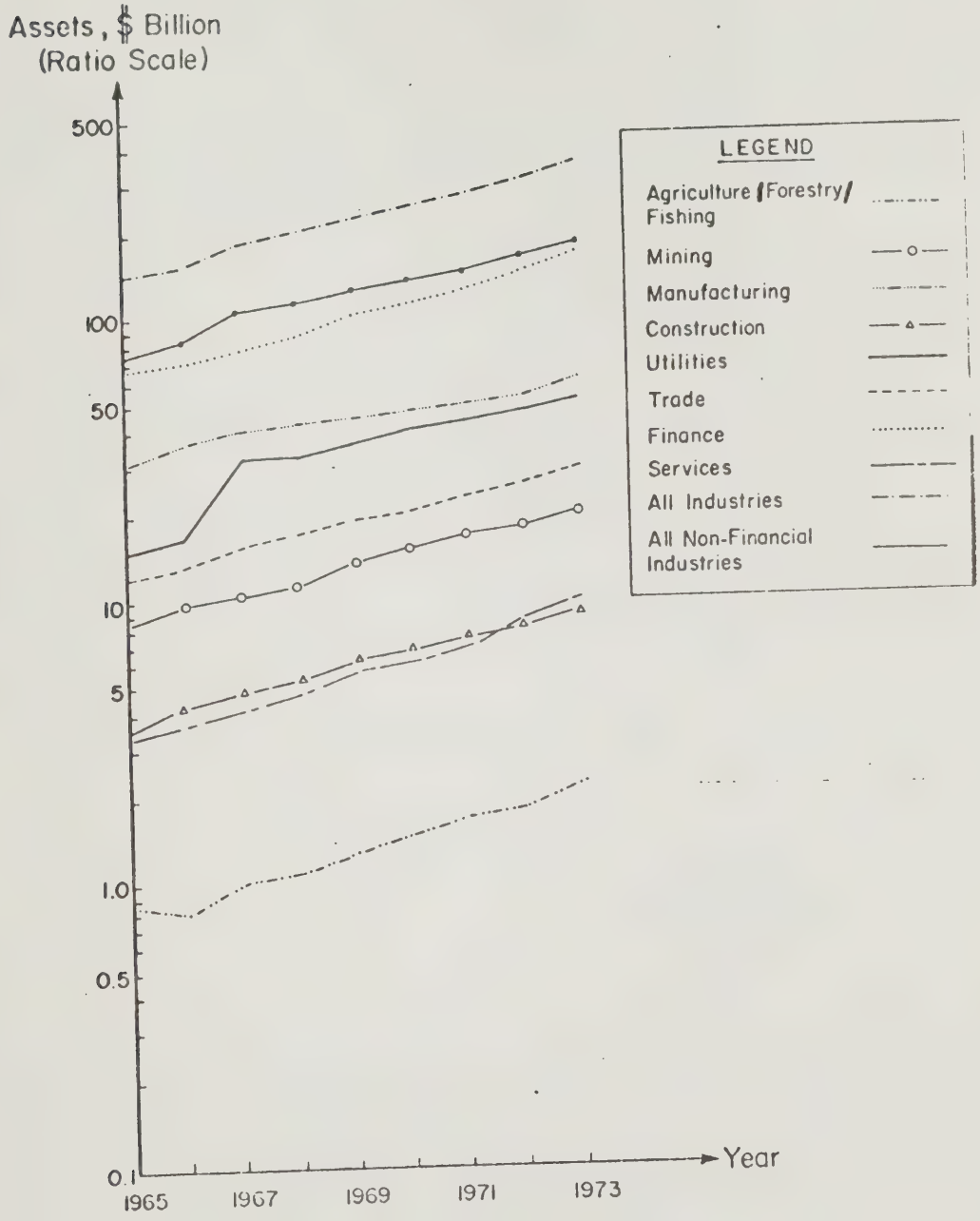
1965



1973

Source: Table 4.

Chart 4. Corporate Assets in Various Divisions of the Canadian Economy, 1965-1973



Source: Table 4.

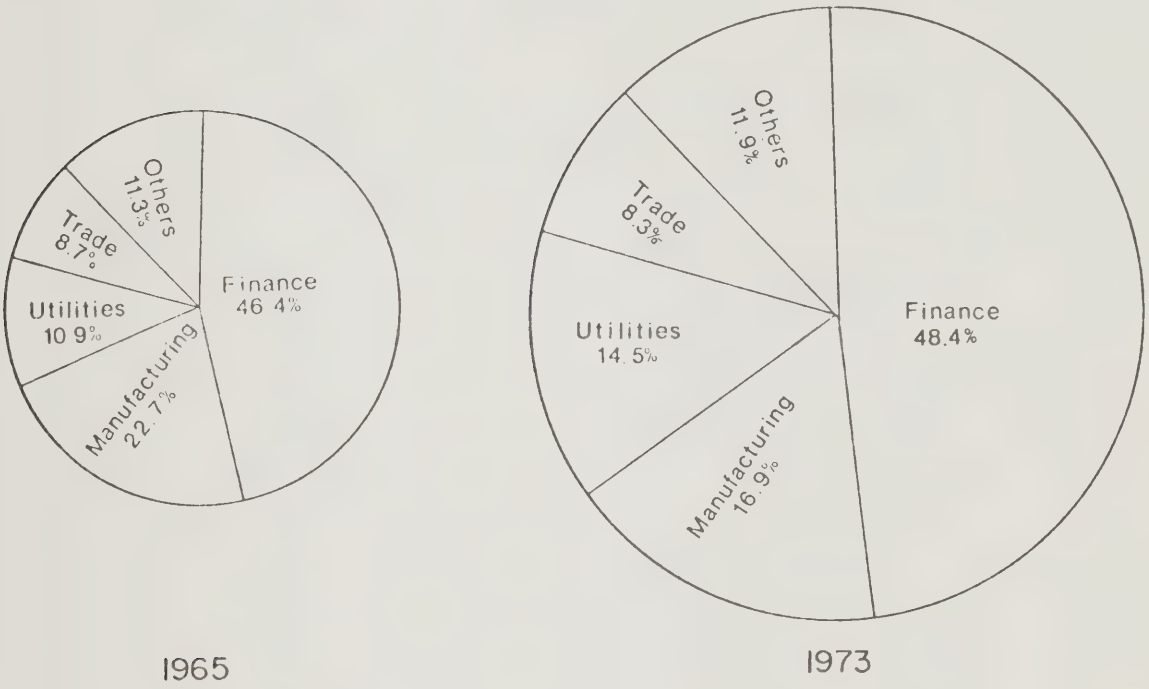
The distribution of corporate assets by division in Charts 5 and 6 proves most interesting: Finance accounts for almost one-half of all corporate assets with Manufacturing and Utilities trailing well behind. It is also interesting to note that Finance even improved its position by two percentage points in 1965/1973. The separation of financial from industrial activity puts things in a somewhat more proper perspective: Manufacturing remained the leading division in the non-financial sector; however, it lost almost 10 percentage points in 1965/1973. Utilities gained considerably but the major part of this gain may be a statistical one only inasmuch as the inclusion of previously excluded crown corporations is concerned. Trade and Mining retained their respective positions.

The trend in *corporate sales* followed basically the same pattern as for assets. Consequently, Chart 7 shows a general upward trend for each of the eight divisions in 1965/1973. Corporate sales increased from $90 B in 1965 to $212 B in 1973, an increase of 137% at an average annual growth rate of 11.3% (*vid.* Table 4). Average annual growth rates by division were slightly more evenly spread than the ones for assets, and could be classified as follows:

Rapid Growth	Moderate Growth	Slow Growth
Finance (17.4%)	Trade (11.1%)	-
Mining (15.9%)	Construction (10.2%)	
Services (15.0%)	Manufacturing (9.3%)	
Agriculture/Forestry/ Fishing (14.8%)		
Utilities (13.8%)		

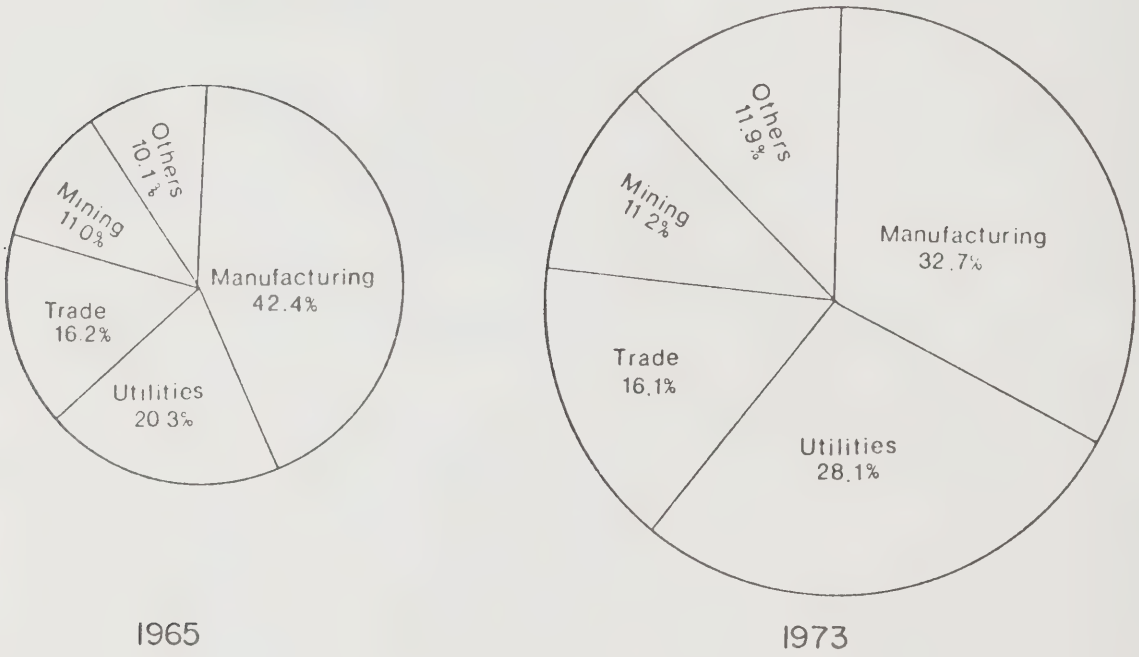
The distribution of corporate sales by division in Charts 8 and 9 displays little difference since the impact of the financial sector is by far not as significant as with assets. However, two points deserve specific mention: (i) in 1973, Manufacturing and Trade contained three-quarters of the sales of non-financial corporations and almost 70% of the sales of all corporations with a considerable decline in the overall share of Manufacturing

Chart 5. Relative Importance of Various Divisions of the Canadian Economy: Corporate Assets, All Industries, 1965 and 1973



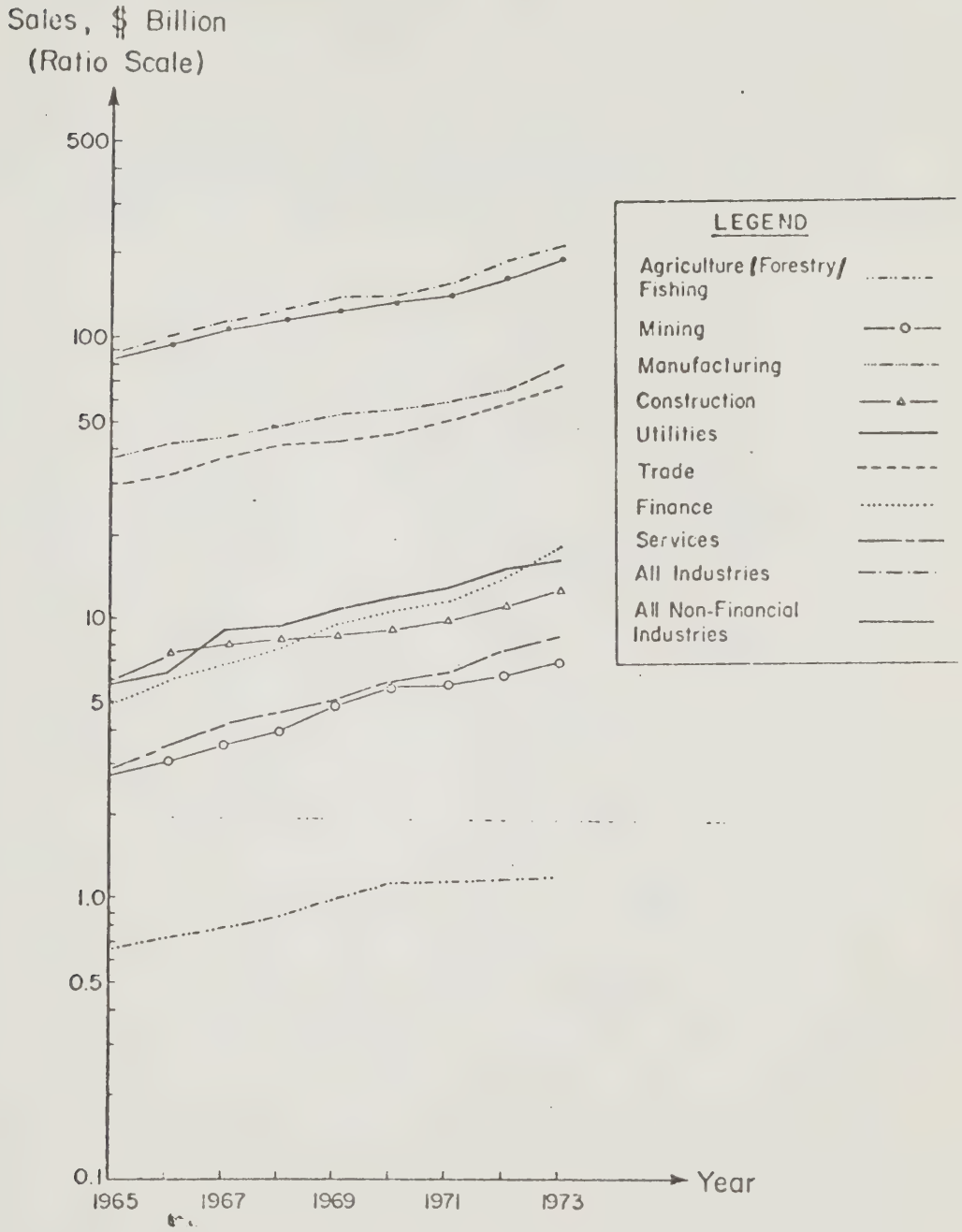
Source: Table 4.

Chart 6. Relative Importance of Various Divisions of the Canadian Economy: Corporate Assets, All Non-Financial Industries, 1965 and 1973



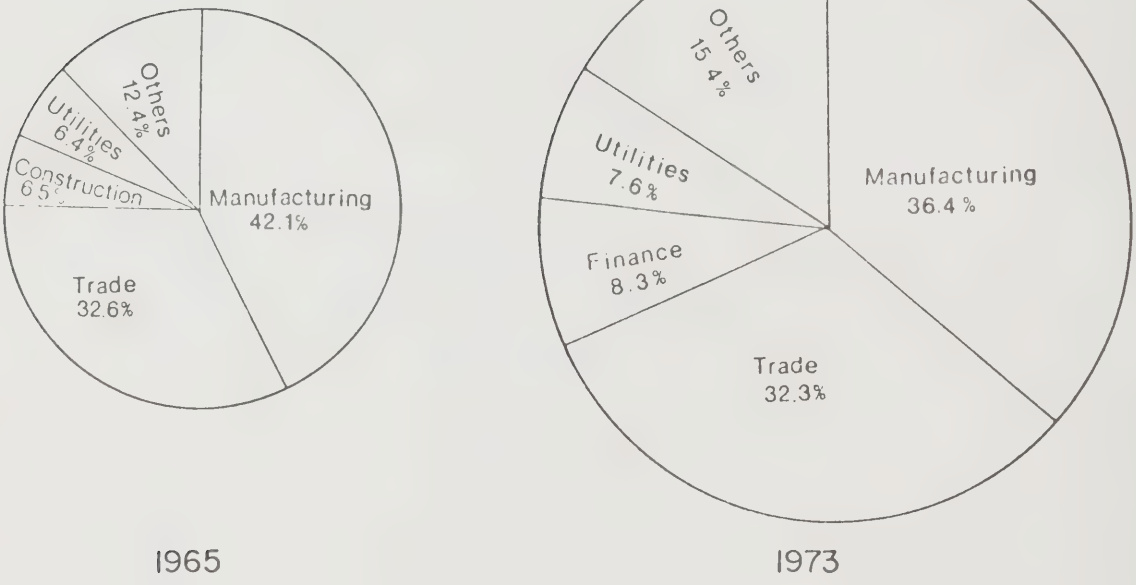
Source: Table 4.

Chart 7. Corporate Sales in Various Divisions of the Canadian Economy, 1965-1973



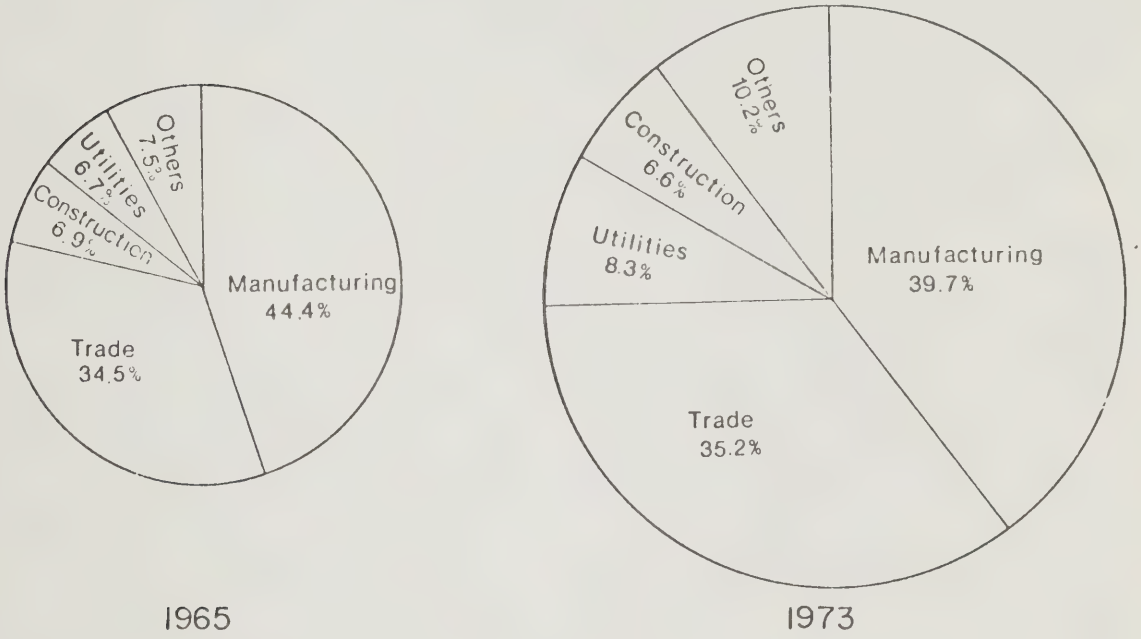
Source: Table 4.

Chart 8. Relative Importance of Various Divisions of the Canadian Economy: Corporate Sales, All Industries, 1965 and 1973



Source: Table 4.

Chart 9. Relative Importance of Various Divisions of the Canadian Economy: Corporate Sales, All Non-Financial Industries, 1965 and 1973



Source: Table 4.

in 1965/1973, and (ii) Finance showed the fastest growth in sales[32] with an average annual growth rate of 17.4%. In fact, Finance was the only division that increased its share in total corporate sales by a substantial margin whereas the respective shares of other divisions declined or registered insignificant gains only.

In view of the rapid growth of the tertiary sector, it is not surprising to find Services in the lead in growth of numbers of corporations and well in front in terms of both asset and sales growth. At the other end of the spectrum, Manufacturing was last in asset and sales growth and last to Mining only in growth of numbers of corporations.

222. Corporate Size and Inequality

The first step towards an analysis of concentration is the statistical analysis of size distributions of corporations. Since the relative position of corporations in the upper size classes coincides with concentration of economic power, an increasing trend of their respective shares in total business activity may become a matter of concern for competition policy.

The size distribution of corporations in Canada is lopsided: a vast number of small corporations accounts for a comparatively minor fraction of assets and sales whereas a few large corporations control the majority of assets and a considerable share of sales. The magnitudes in Table 5 are straightforward: in 1968, 94% of all corporations had assets of less than $1 M, and only 0.1% had assets of more than $100 M. Yet, the small corporations[33] with an average asset size of $140,000 held only 13% of assets and 30% of sales. On the other hand, the large corporations with an average asset size of $469 M accounted for more than one-half of assets

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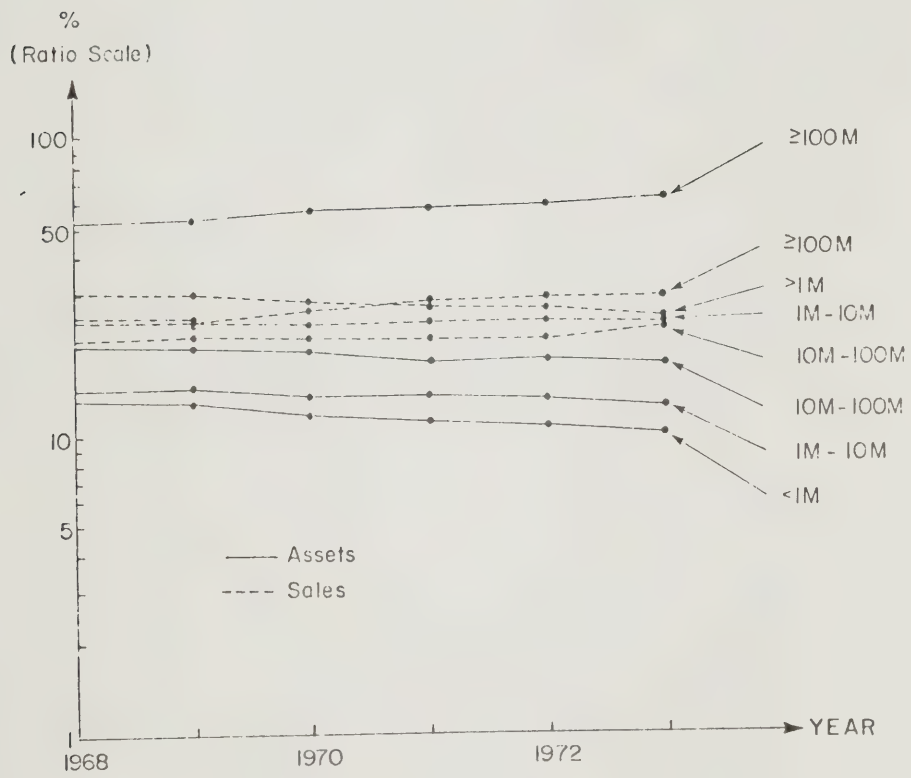
[32] To be interpreted as 'total revenue' (*vid. supra*).

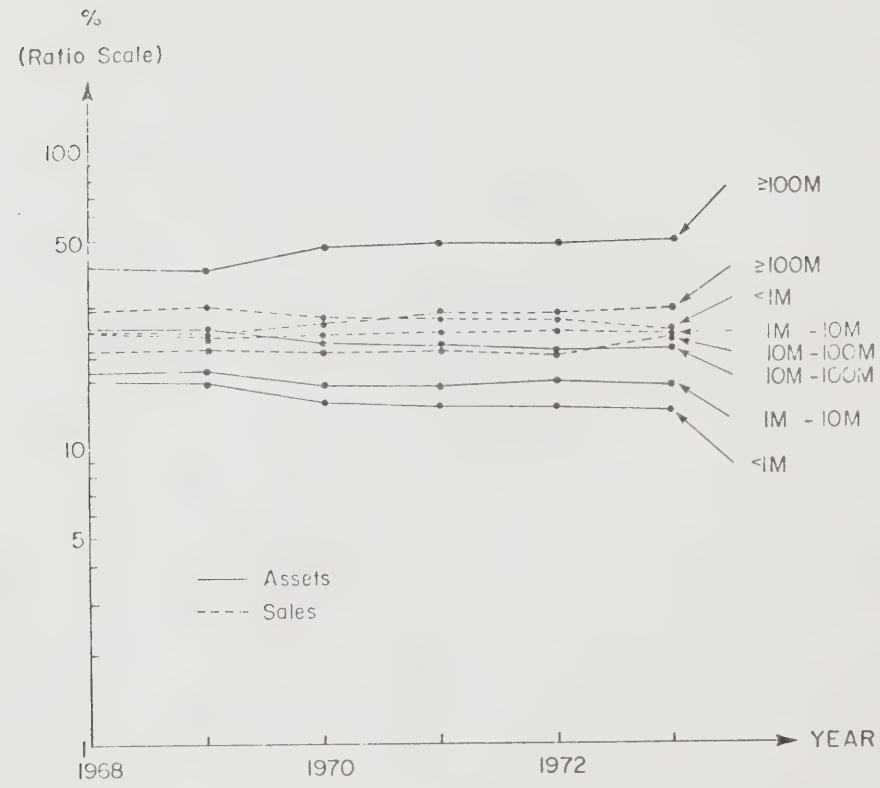
[33] For easier reference, the following classifications are employed and again serve purely illustrative purposes: "small" (assets of less than $1 M), "medium-sized" (assets between $1 M - $100 M), "large" (assets of more than $100 M), and "giant" (assets of more than $1 B). "Assets" and "Sales" are to be interpreted as "corporate assets" and "corporate sales", respectively.

Chart 10. Percentages of Assets and Sales in Canadian Industries, by Asset Size Class, 1968-1973



Source: Table 5.

Chart 11. Percentages of Assets and Sales in Canadian Non-Financial Industries, by Asset Size Class, 1968-1973



Source: Table 5.

and almost one-quarter of sales. The pattern for non-financial corporations is similar, with the exception of the average size of the large corporations which dropped significantly to $316 M due to the omission of the large financial institutions, a fact that causes the share in assets in the non-financial sector to decline to less than 41%.

Despite this already 'high level of concentration', large corporations have been able to expand their territory even further in 1968/1973. In Charts 10 and 11, the steady upward trend in the highest size class becomes clearly visible; at the same time, the gradual decline in the relative importance of small and medium-sized corporations can be observed. The resultant gain in 1968/1973 for large corporations is astounding: 8.2 percentage points in assets to a total of more than 60% of total assets in 1973, and 4.5 percentage points in sales to a total of almost 30% of total sales in 1973. During the same time, the average size of the large corporations had increased by 24.5% to $584 M. For the non-financial sector, the gains of large corporations were even more marked. They improved their position relative to small and medium-sized corporations by 8.6 percentage points to almost 50% of total assets, and by 4.6 percentage points to close to 30% of total sales; the average size of the large non-financial corporations increased by 32% to $417 M in 1973.

The changes in the size distribution of corporations had a considerable impact on the inequality among corporations. In Table 6, Gini ratios for assets and sales have been calculated for the period from 1968-1973.[34] For all corporations, asset inequality rose from 0.6981 to 0.7582, an increase of 12%; sales inequality rose from 0.4529 to 0.5067, an increase of 10.8%. The corresponding figures for non-financial corporations

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[34] The Gini ratio, R, was calculated according to the formula

$$R = \sum_{i=1}^{k-1} (p_i - q_i) \Big/ \sum_{i=1}^{k-1} p_i \qquad 0 \leq R \leq 1 - \frac{1}{n}$$

n = number of firms

where p_i denotes the cumulative share in the total number of corporations by the i-th asset size group, and q_i its corresponding cumulative share in assets. The difference between two Gini ratios is

$$D = R_2 - R_1 / \sqrt{R_1 (1 - R_1)}$$

[*cf.* 7, pp.126-127].

read 0.6370 and 0.6801 (9%), respectively, for assets, and 0.4538 and 0.5099 (11.3%) respectively, for sales. Thus, asset inequality could be classified as 'high' for all corporations and assumes somewhat lower levels for non-financial corporations; by contrast, sales inequality is 'medium' and does not differ materially between the two sets.[35] Obviously, the increased level of inequality in the size distribution of corporations leads to the expectation of a similar increasing trend of corporate concentration levels. However, before employing concentration ratios to verify this trend, a closer look at the group of large corporations seems to be necessary.

As was mentioned earlier, the published figures in the highest asset group of "$100 M and over" conceal the corporate giants in the Canadian economy. For that reason, a further breakdown is provided in Table 7 into three size groups of up to "$1 B and over". A situation analogous to the previous size distribution prevails: again, corporations in the highest size group made the inroads into assets' and sales' shares in 1965/1973. In 1965, 11 corporate giants with an average asset size of $3.35 B accounted for one-quarter of all assets and 3% of all sales.[36]

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[35] The suggested classification of levels of inequality in terms of the Gini ratio is as follows: high, 0.7 and over; medium, 0.4-0.7; low, under 0.4.

[36] These figures do not include insurance carriers. According to information from the Business Finance Division of Statistics Canada, there were 534 insurance carriers (SIC 771, 772) in Canada in 1965 with total assets of $8,820.5 M and total revenue of $2,072.2 M. Their size distribution of assets in the four groups of Table 5 was as follows:

No. of Insurance Carriers	Assets ($M)	Total Revenue ($M)
381	45.5	20.4
76	174.8	98.4
65	1,300.2	433.4
12	7,300.0	1,520.0

Four insurance carriers with assets of more than $1 B held total assets of approximately $4.8 B and total revenue of approximately $1 B. Consequently, including insurance carriers, 15 corporate giants with an average asset size of $2.8 B accounted for 27% of all corporate assets and 4% of corporate sales. Unfortunately, comparable figures for insurance carriers for 1973 are missing.

By 1973, this exclusive group consisted of 29 corporations with an average asset size of $4.3 B and held more than 35% of all corporate assets and almost 10% of all corporate sales.

In the non-financial sector, only three corporations, all of them utilities, were in the top size class in 1965. They had an average asset size of $2.6 B and accounted for 10% of assets and for 2% of sales. By 1973, the number of non-financial corporate giants had quintupled, a boom that resulted in a slight decline of the average asset size to $2.5 B. However, their combined share in assets had doubled to 20% and their share in sales had increased to 7%.

A perspective view of corporations by asset size groups and their corresponding asset and sales shares for the years 1965 and 1973 is presented in Charts 12 and 13.[37] Once more, they summarize the significant gain

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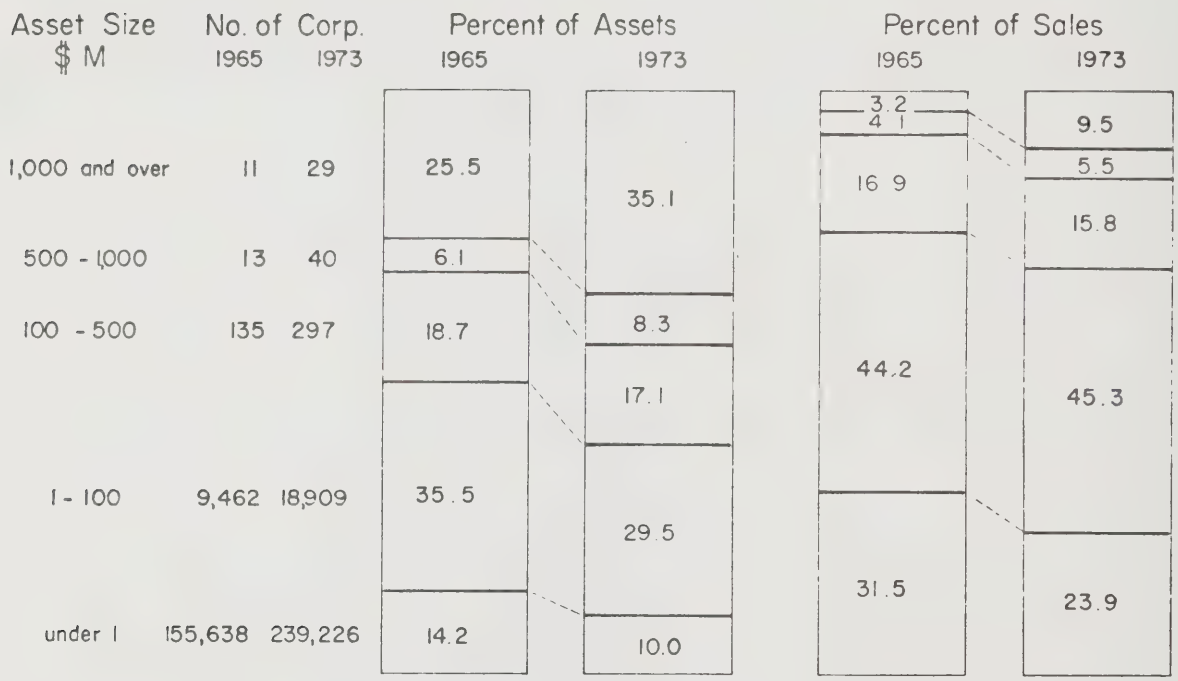
[37] The data in the asset size groups of less than $100 M read as follows:

Asset Size $M	No. of Corporations	Assets $M	Sales $M
	All Industries		
under 1			
1965	155,638	20,448.5	28,462.5
1973	239,226	35,491.7	50,638.6
1-100			
1965	9,462	51,067.2	39,909.1
1973	18,909	105,176.5	95,887.0
	All Non-Financial Industries		
under 1			
1965	112,207	14,195.8	27,154.9
1973	167,348	24,500.9	49,963.3
1-100			
1965	6,265	33,907.7	38,354.5
1973	12,432	68,751.5	91,497.1

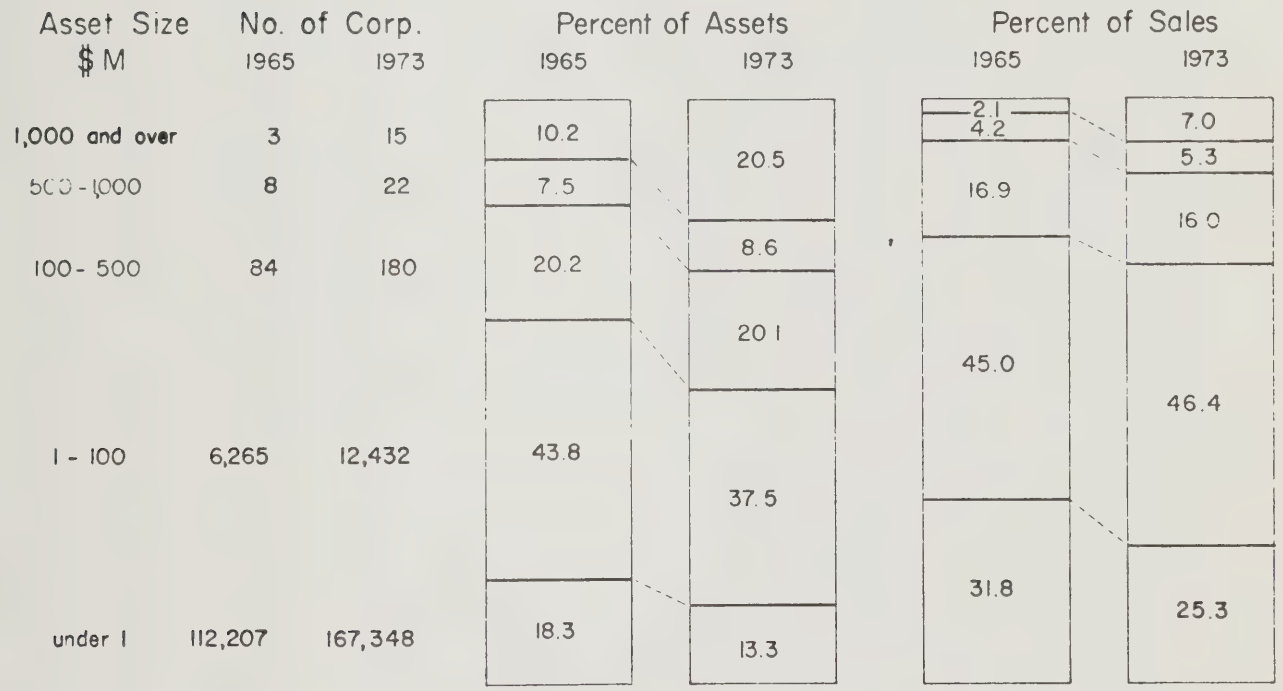
Source: Communication of the Business Finance Division, Statistics Canada.

Chart 12. Corporate Concentration of Assets and Sales in the Canadian Economy, by Asset Size Groups of Corporations, 1965 and 1973



Sources: Table 7; n.37.

Chart 13. Corporate Concentration of Assets and Sales in the Non-Financial Sector of the Canadian Economy, by Asset Size Groups of Corporations, 1965 and 1973



Sources: Table 7; n.37.

in the share of assets held by the very largest corporations at the expense of medium-sized and small corporations. To a lesser extent, the same trend applies to sales.

223. Concentration Ratios for the 200 Largest Non-Financial Corporations

The shares of the corporate giants with assets in excess of $1 B have already provided some insight into potential levels and trends of concentration. However, the reference to a fixed number of largest firms in intertemporal and/or interindustry comparison has proven more operational for purposes of concentration measurement. To be sure, a group of firms as designated by a concentration ratio is a changing rather than a static group and is affected by entries and exits alike. For instance, of the 100 largest industrial corporations in the United States in 1909 only 36 remained on this list in 1948 [*cf.* 27, p.17]. The likelihood of such a turnover is certainly greater for overall concentration where control over a large proportion of the nation's industrial resources is measured than it is for industrial concentration in a more or less narrowly defined industry, and it is also a function of the time period covered.

A significant turnover among the largest corporations will hardly have occurred in the rather short period under consideration. In fact, the time period may be viewed as being too short for drawing conclusions about the trend of overall concentration. Nevertheless, an evaluation of concentration levels of the 25, 50, 100, and 200 largest non-financial corporations in Exhibit 5 represents an important tool in the socio-economic issue of overall concentration and its effects on market conduct and market performance [*cf.* 9, p.60]. In this light, the significance of having, respectively, one-quarter and almost one-half of Canada's industrial resources held by the 25 largest and the 200 largest non-financial corporations and, thus, leaving the other one-half only to the remaining 179,800 non-financial corporations in 1973 cannot be denied. It should also be borne in mind that these shares represent minimum estimates of the 'true' level of concentration not containing the whole network of controls. With regard to corporate sales, the 25 largest accounted for

Exhibit 5. Shares of Assets (A) and Sales (S) Accounted for by the 25, 50, 100, and 200 Largest Non-Financial Corporations in Canada, by Asset Size, 1965, 1968, and 1973

Year	Top 25		Top 50		Top 100		Top 200	
	A	S	A	S	A	S	A	S
1965	23.8	10.4	30.6	15.2	38.6	23.5	47.2	28.7
1968	22.5	10.1	29.4	14.0	37.3	21.4	46.2	27.6
1973	25.2	11.0	32.4	15.0	40.1	21.0	48.3	28.2

Source: Special Tabulation, Business Finance Division, Statistics Canada, Ottawa, 1976.

11% and the 200 largest for close to 30%. In terms of the absolute magnitudes involved,[38] the 25 largest expanded their assets in 1965/1973 from $18.4 B to $46.2 B and the 200 largest from $36.6 B to $88.7 B. Thus, compared to the increase for all non-financial corporations (from $77.5 B to $183.7 B), the 25 largest were ahead by 13 percentage points and the 200 largest by 5 percentage points. The corresponding sales data read $8.9 B and $21.4 B for the 25 largest and $24.5 B and $54.9 B for the 200 largest compared to $85.4 B and $194.3 B for all non-financial corporations. Consequently, the 25 largest registered a 17 percentage point lead in sales growth whereas the 200 largest lagged by 3 percentage points. The increases of 1.4 percentage points and 1.1 percentage points, respectively, in asset concentration by the 25 largest and the 200 largest during 1965/1973 seem minute only but they have to be weighed in proper perspective against the nation's total industrial resources where one percentage point represents a magnitude of about $2 B (*vid.* Table 4). The respective trends of overall concentration downwards from 1965 to 1968 and upward again from 1968 to 1973 have been plotted in Chart 14.

To summarize the findings of Exhibit 5, in 1973 the first 25 non-financial corporations in Canada accounted for roughly 25% of the industrial resources, the next 25 for 7%, the next 50 for 8% and, finally, the next 100 for 8.5% for a total of almost 50% for the 200 largest.

23. Concentration in Eight Divisions of the Canadian Economy

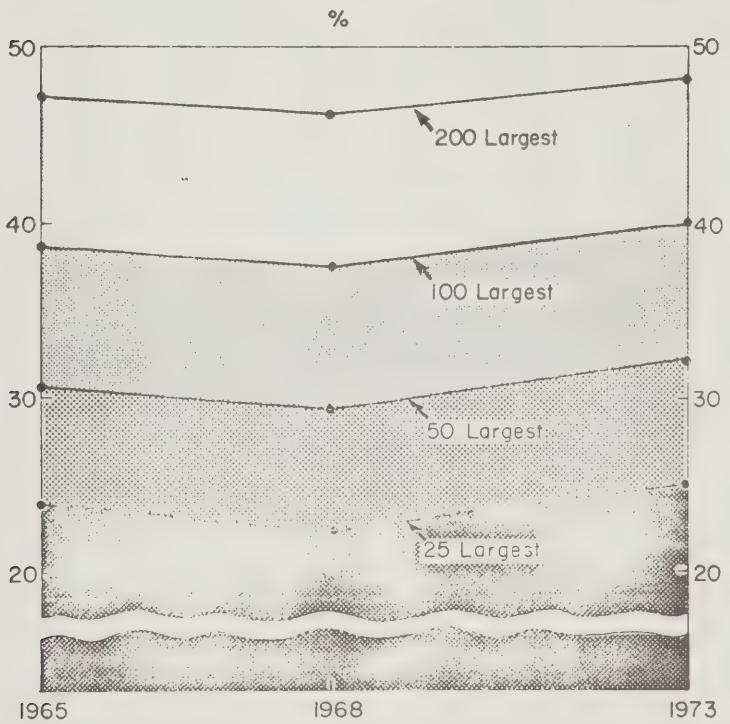
231. Divisional Profiles

2311. Agriculture/Forestry/Fishing

This is the only division in the Canadian economy where the share of business activity is still almost evenly split between corporations and unincorporated businesses (*vid.* Table 2). Not unexpectedly, it is also

[38] Figures were communicated by the Business Finance Division, Statistics Canada.

Chart 14. Share of Assets Accounted for by the 200 Largest Non-Financial Corporations in Canada, 1965, 1968, and 1973



Source: Exhibit 5.

a division marked by the complete absence of large corporations.[39] Moreover, corporations in the immediately preceding asset group of $10-100 M showed a drastic decline in 1968/1973 with a simultaneous increase in the relative importance of small corporations as depicted in Chart 15. In 1973, there were only three corporations left with assets of more than $10 M and they accounted for 6% of assets and 3% of sales, down from five corporations in 1968 with 15% and 4%, respectively. Consequently, the size distributions of both assets and sales come close to levels of equal distribution: during 1968/1973, the Gini ratio for assets declined by 13% to a low of 0.1725, and for sales it increased by 13% to 0.1664. The latter gain was due to the strong increase in sales by medium-sized corporations relative to small corporations. The indicated trend is reflected in the drastic decline of concentration ratios as depicted in Chart 16. In 1965/1973, the top-4 ratio for asset concentration decreased by almost five percentage points, the top-100 ratio even by ten percentage points. On the other hand, sales concentration remained almost unchanged. Briefly put, in 1973 the 4 largest corporations accounted for 7% of assets, the next 4 for 2%, the next 12 for 4%, the next 30 for 5% and, finally, the next 50 for 5%, for a total of 23% for the 100 largest corporations. In fact, this represents the lowest level of asset concentration among all of the eight divisions.

2312. Mining

In the mining industries, large corporations widened their shares in assets and sales substantially relative to small and medium-sized corporations in 1968/1973. This is presented in Chart 17 in a steady increase of the highest asset group up to 60% of assets and to almost 65% of sales in 1973. During the same period, the shares of small corporations were cut into one-half to a low of 3% in assets and to

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[39] Unless otherwise specified, data for asset size groups are taken from Tables 5 and 7, data for inequality (Gini ratio) from Table 6, and concentration ratios from Exhibit 6.

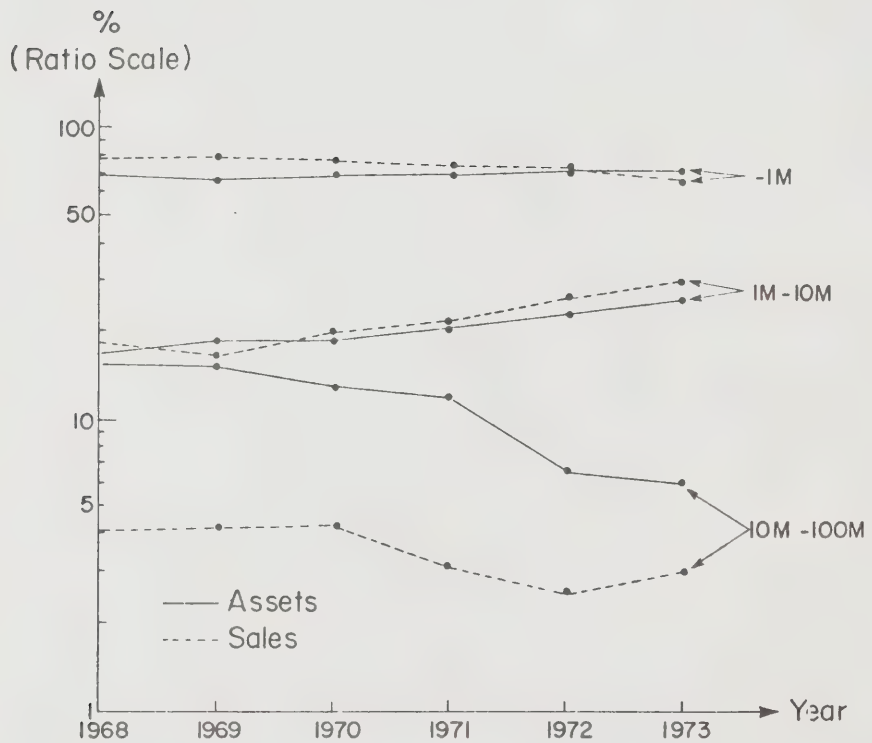
Exhibit 6. Shares of Assets (A) and Sales (S) Accounted for by the 4, 8, 20, 50, and 100 Largest Corporations in Various Divisions of the Canadian Economy Ordered by Divisional Assets, 1965, 1968, and 1973

Year	Top 4		Top 8		Top 20		Top 50		Top 100	
	A	S	A	S	A	S	A	S	A	S
AGRICULTURE/FORESTRY/FISHING										
1965	11.6	2.6	14.5	5.4	. .	. .	. .	. .	32.7[a]	22.3[a]
1968	10.4	3.7	13.0	5.5	17.7	10.2	23.4	16.9	28.7	24.2
1973	6.8	3.3	8.4	4.5	11.9	9.5	17.3	14.9	22.6	21.6
MINING										
1965	14.5	9.7	24.6	30.2	41.4	46.9	59.8	63.3	72.5	75.2
1968	17.9	21.0	28.0	29.1	32.7	45.9	51.4	66.7	64.1	76.5
1973	20.4	17.4	29.6	31.7	46.0	50.7	64.3	68.4	77.7	81.0
MANUFACTURING										
1965	10.8	6.7	16.9	13.9	27.0	20.1	40.1	31.8	51.2	39.0
1968	9.6	5.9	15.4	13.2	25.7	21.3	38.4	30.1	49.5	37.9
1973	8.9	6.5	14.9	16.2	24.7	23.4	36.9	31.7	47.7	39.1
CONSTRUCTION										
1965	5.6	1.8	8.3	3.6	13.7	9.4	21.1	14.6	. .	. .
1968	5.3	1.2	8.4	2.0	14.8	6.5	24.4	13.6	32.4	20.0
1973	5.7	1.8	9.3	3.5	16.1	5.7	24.8	11.0	31.9	16.7
UTILITIES										
1965	53,8	34.4	63.2	42.2	74.5	53.3	84.1	61.3	89.3	67.8
1968	51.6	32.2	62.1	41.3	74.6	51.0	84.0	58.3	88.7	65.3
1973	39.2	26.0	54.5	36.1	71.4	47.9	84.0	59.4	89.5	67.3
TRADE										
1965	9.1	8.0	13.9	13.3	20.4	18.2	27.7	24.7	. .	. .
1968	8.1	7.2	13.1	12.9	20.2	18.1	27.8	24.9	33.8	29.5
1973	10.4	6.3	15.4	12.7	22.2	18.8	29.9	26.6	36.0	32.5
FINANCE[b]										
1965	31.2	15.1	43.3	21.9	52.3	28.2	62.4	39.2	68.9	45.4
1968	31.0	22.4	42.9	30.8	51.4	37.4	60.6	45.9	67.0	51.2
1973	33.2	23.2	45.6	32.2	54.0	38.5	62.7	45.5	69.1	51.0
SERVICES										
1965	5.2	0.7	7.5	1.3	11.9	2.9	18.5	6.6	. .	. .
1968	6.6	2.0	10.3	2.8	17.2	7.8	24.3	11.8	30.0	15.9
1973	4.6	3.0	7.6	5.1	13.8	7.8	21.9	12.5	29.3	15.3

a) Top 95.
b) Excluding Credit Unions (SIC 716), Caisses Populaires (SIC 717), Foreign Business Corp. (SIC 765), and Insurance Carriers (SIC 771, 772, 775, and 776).

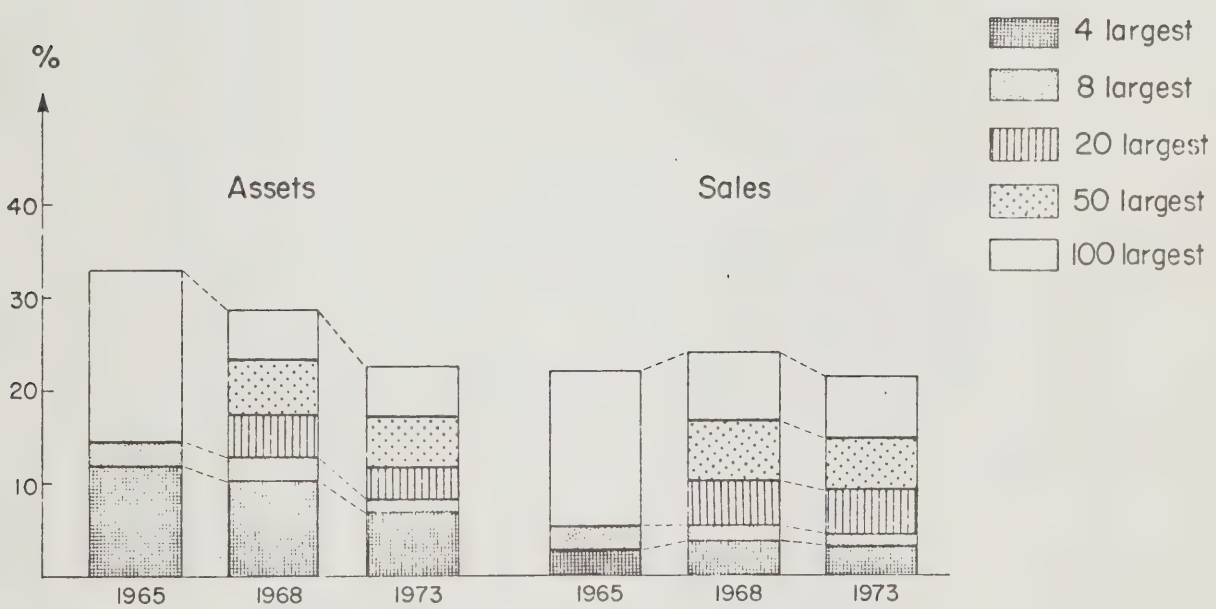
Source: Special Tabulation, Business Finance Division, Statistics Canada, Ottawa, 1976.

Chart 15. Percentages of Assets and Sales in Canadian Agriculture/Forestry/Fishing, by Asset Size Class, 1968-1973



Source: Table 5.

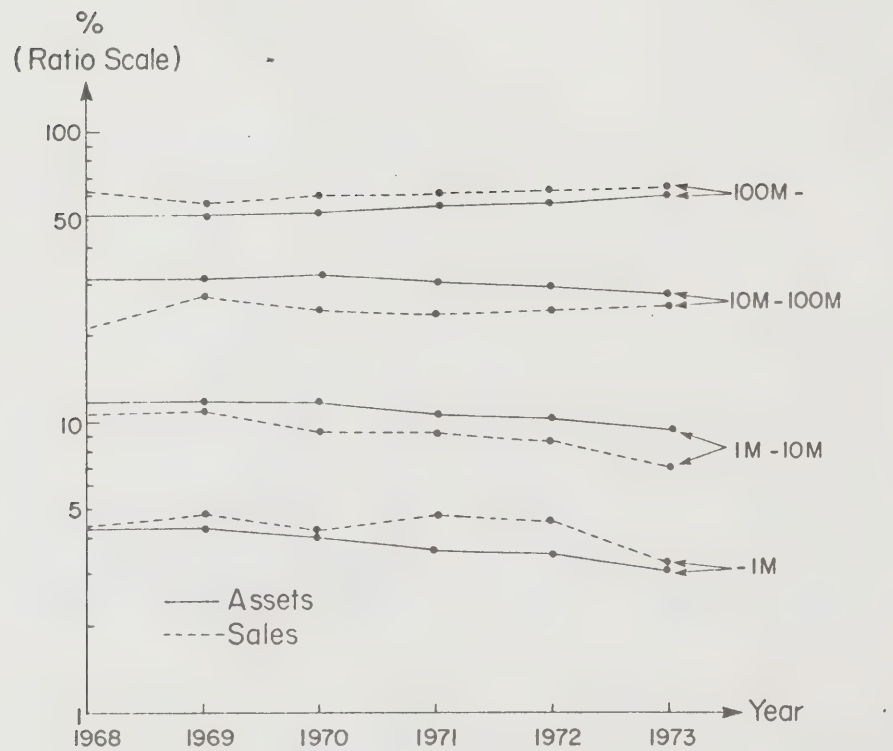
Chart 16. Concentration of Assets and Sales in the 100 Largest Corporations in Canadian Agriculture/Forestry/Fishing, by Asset Size of Corporations, 1965, 1968, and 1973[a]



[a] For 1965, data for 95 largest corporations; data for 20 largest and 50 largest corporations not available for 1965.

Source: Exhibit 6.

Chart 17. Percentages of Assets and Sales in Canadian Mining Industries, by Asset Size Class, 1968-1973



Source: Table 5.

a little more than 3% in sales. The trend towards corporate giantism is also reflected by the appearance of one corporation in the $B group in 1968; by 1973, this corporation controlled almost as many assets as did the 3,706 corporations with assets up to $10 M and slightly *more* than the sales of these corporations. Also, four corporations had moved into the group of $500 M - $1 B by 1973 and controlled 13% of assets and 8.5% of sales. Therefore, it is not surprising that the size distributions of assets and sales display high levels of inequality: in 1968/1973, asset inequality increased by 11% to 0.7982 and sales inequality by 5.5% to 0.8205.

Turning to the concentration ratios, at first glance, Mining does not seem to display high concentration levels. However, the extent of aggregation to the divisional level has to be kept in mind when evaluating these levels, a statement that applies, *cum grano salis*, to concentration in other divisions as well *(vid. infra)*. Against this perspective, the control of one-fifth and almost four-fifths, respectively, by the 4 largest and the 100 largest in 1973 becomes more meaningful. The somewhat mixed pattern of concentration changes in 1965/1973 has been depicted in Chart 18 and displays impressive increases in concentration: for the top-4, six percentage points in assets and eight percentage points in sales, and for the top-100 five percentage points in assets and six percentage points in sales.

2313. Manufacturing

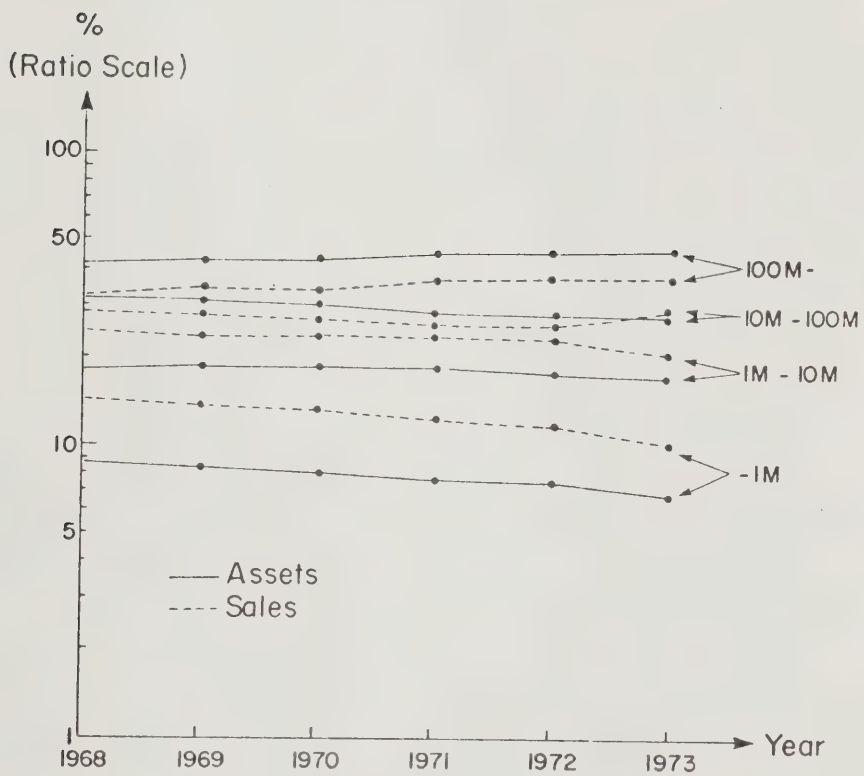
As was already mentioned, Manufacturing was at the bottom of the list for growth in assets and in sales during 1965/1973, and slow growth apparently attributed to divergent trends in inequality and concentration.

To begin with, large corporations expanded their territory relative to medium-sized and small corporations in 1968/1973 as can be seen from Chart 19: their share rose by more than 5 percentage points to almost 48% in assets and by more than six percentage points to almost 39% of sales with corresponding losses of corporations in other size groups. In the $B group, the number of corporations increased from zero in 1965 to two in 1968 to five in 1973. The five corporate giants with

Chart 18. Concentration of Assets and Sales in the 100 Largest Corporations in Canadian Mining Industries, by Asset Size of Corporations, 1965, 1968, and 1973

Source: Exhibit 6.

Chart 19. Percentages of Assets and Sales in Canadian Manufacturing Industries, by Asset Size Class, 1968-1973



Source: Table 5.

an average asset size of $1.3 B held almost 11% of all assets and 7.5% of sales. These trends affected inequality to rise by almost 7% to 0.7020 for assets and by more than 11% to 0.6282 for sales.

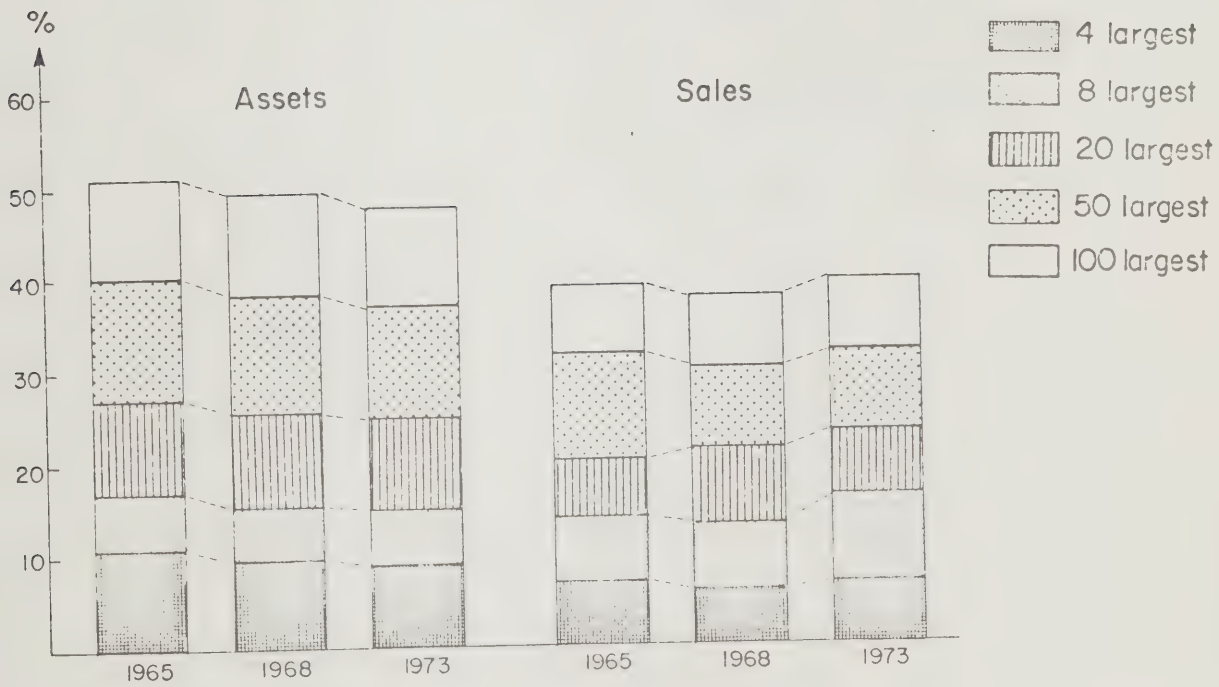
Despite the increase in inequality, asset concentration levels showed a slight but consistent decline in 1965/1973, whereas sales concentration remained more or less stable (*vid.* Chart 20). The four largest lost 2 percentage points in assets to a little less than 9%, with sales concentration remaining stable at 6.5%; the 100 largest even lost 3.5 percentage points in assets to almost 48% with sales concentration remaining at close to 40%.

2314. Construction

Similar to Agriculture/Forestry/Fishing, Canadian construction industries are still dominated by small and medium-sized corporations. However, unlike the former division, corporate businesses account for the overwhelming share of business activity in construction (*vid.* Table 2). The greatest share of assets and sales is still held by small corporations, *viz.* 36% and 53%, respectively. However, according to Chart 21, this group recorded substantial declines in the shares of assets and sales which were absorbed entirely by the next size group. On the other hand, large corporations accounted for an insignificant 4% in assets and less than 1.5% in sales in 1973. In fact, there was only one large corporation each in 1965 and 1968, and two with an average asset size of $171 M in 1973. Consequently, inequality in assets was low in 1973 and had changed little in 1968/1973; inequality in sales was even lower and had remained unchanged.

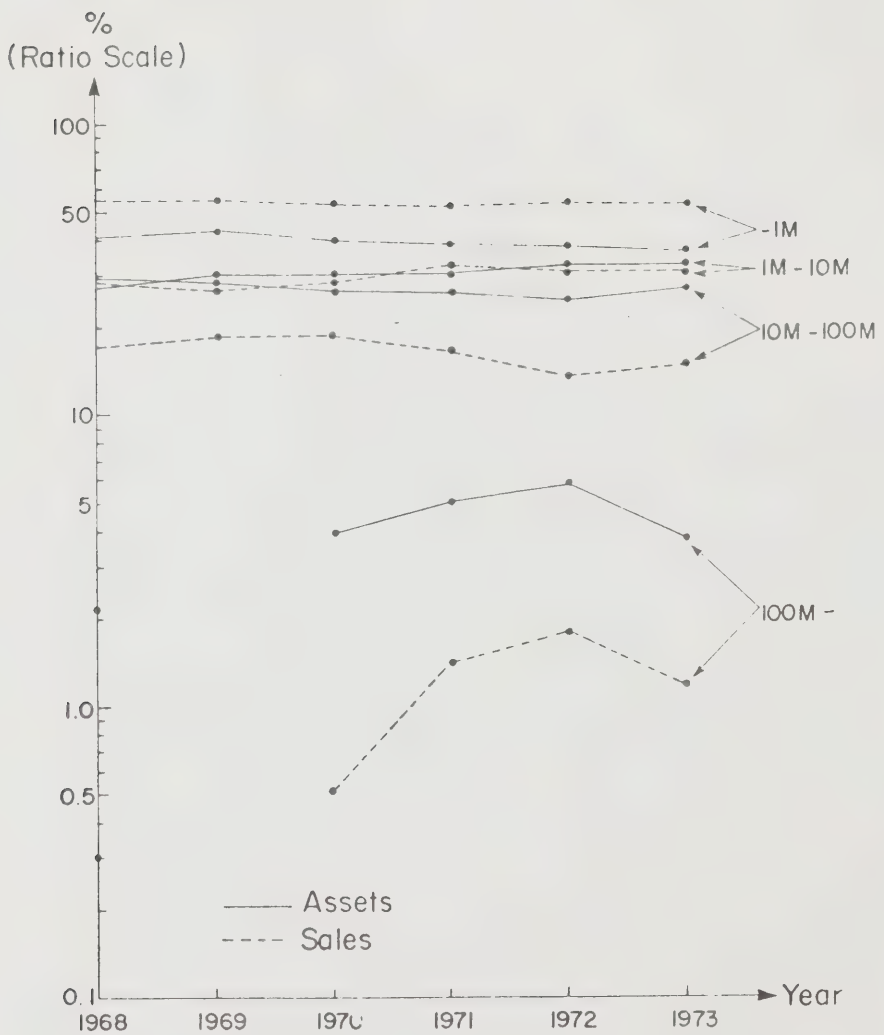
Not surprisingly, concentration levels in Construction are low, even taking the level of aggregation into proper perspective, as can be seen from Exhibit 6 and from Chart 22. The four largest accounted for less than 6% of assets and less than 2% of sales, almost unchanged from 1965 levels. Comparable data for the 100 largest do not exist for 1965. However, taking trends for the 20 and 50 largest as indicators, it can be assumed that the concentration ratio would have stood at approximately 30% in 1965. Thus, a very moderate increase in asset concentration was

Chart 20. Concentration of Assets and Sales in the 100 Largest Manufacturing Corporations in Canada, by Asset Size of Corporations, 1965, 1968, and 1973



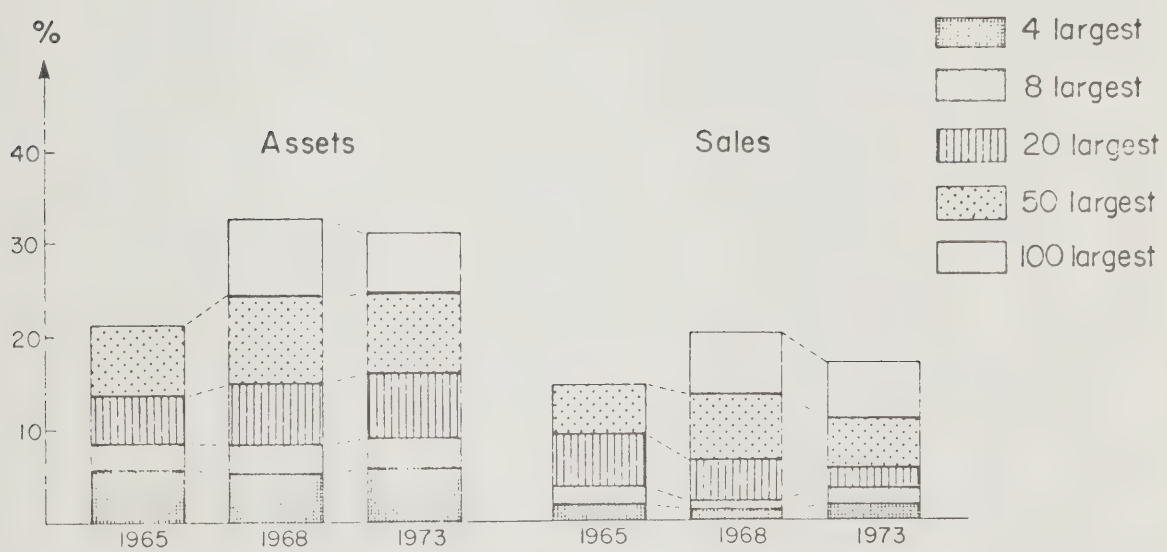
Source: Exhibit 6.

Chart 21. Percentages of Assets and Sales in Canadian Construction Industries, by Asset Size Class, 1968-1973



Source: Table 5.

Chart 22. Concentration of Assets and Sales in the 100 Largest Corporations in Canadian Construction Industries, by Asset Size of Corporations, 1965, 1968, and 1973



Source: Exhibit 6.

experienced in 1965/1973; sales concentration had decreased at a rate of approximately 4-5%.

2315. Utilities

The division of Utilities represents a rather heterogeneous group consisting of transportation and storage companies with mainly small corporations on the one hand and communication carriers and public utilities which represent the other end of the spectrum. The dominance of large corporations is obvious (*vid.* Chart 23): in 1973, 52 large corporations controlled almost 85% of all assets and 60% of sales leaving a scant 15% of assets and some 40% of sales to the remaining 10,700 corporations. To put things into better perspective, the eight corporate giants with an average asset size of $3.5 B accounted for almost 55% of assets and for 36% of sales. Consequently, levels of asset inequality are very high: the Gini ratio had increased by a substantial 14.5% to 0.9131 in 1973, thus marking the highest level of inequality among all of the eight divisions. Sales inequality was considerably lower although still relatively high and stood at 0.7338 in 1973.

Concentration levels and trends display a rather peculiar pattern according to Chart 24. Asset concentration for the four largest declined by an astounding 14.6 percentage points in 1965/1973 and sales concentration by 8.4 percentage points, whereas the corresponding concentration levels for the 100 largest remained virtually unchanged.[40] This means that corporations outside the top-4 core but among the top 100 had made considerable gains. In fact, the marginal concentration ratio for the second four corporations (MCR_4)[41] increased by 5.9, MCR_{12} by 5.6, MCR_{30} by 3, and MCR_{50} by a scant 0.3 percentage points in 1965/1973. Despite these shifts in asset concentration levels, the share of assets accounted for by the four largest is remarkably high: in 1973, they held 40% of all

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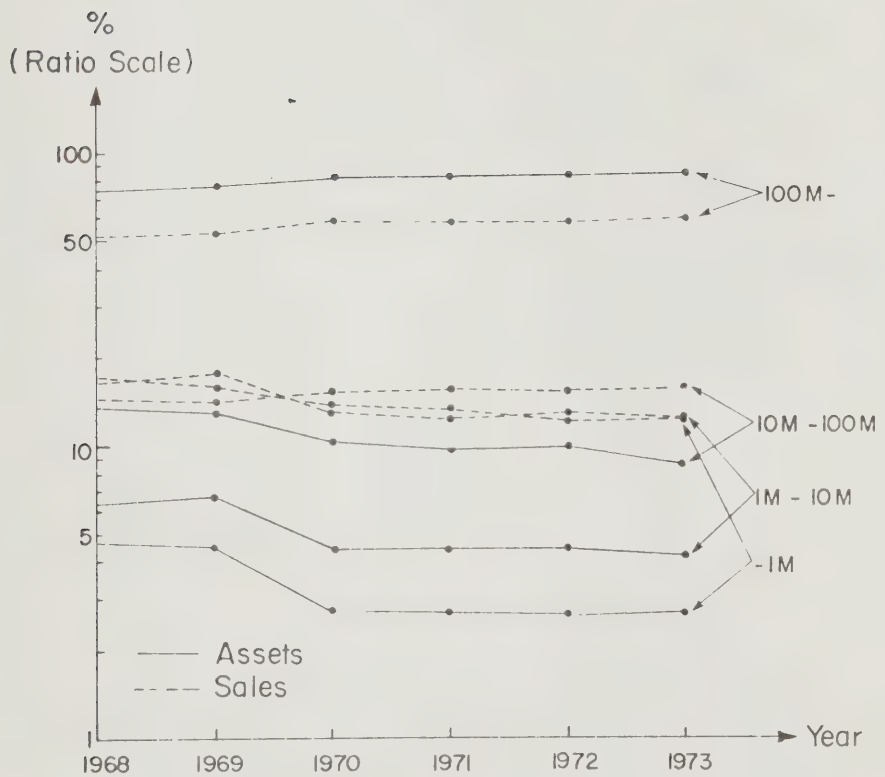
[40] It can be assumed that part of this decline was caused by reclassifications and by the exclusion of crown corporations in the 1965 data.

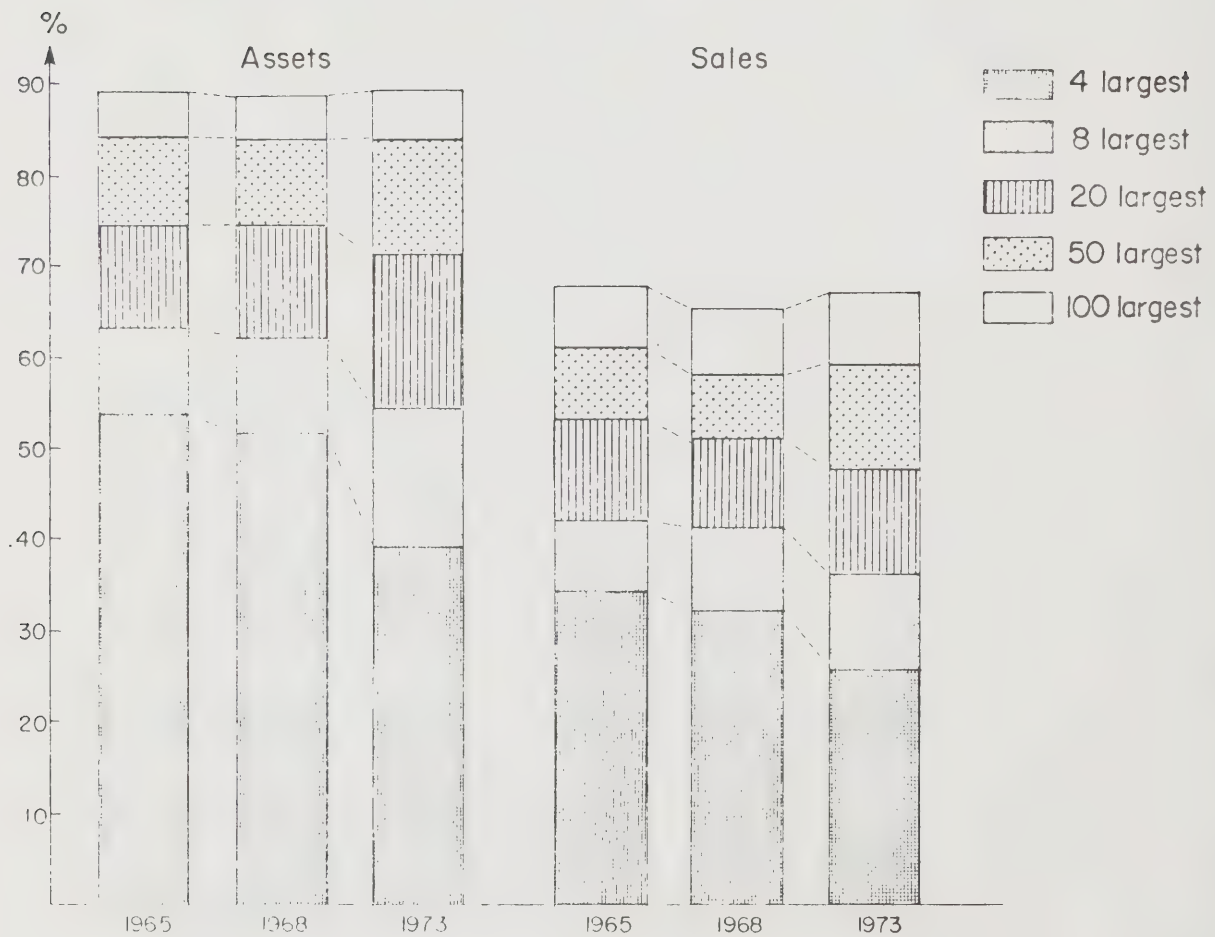
[41] A marginal concentration ratio is the difference between two adjacent concentration ratios.

Chart 23. Percentages of Assets and Sales in the Utilities Sector in Canada, by Asset Size Class, 1968-1973



Source: Table 5.

Chart 24. Concentration of Assets and Sales in the 100 Largest Corporations in the Utilities Sector in Canada, by Asset Size of Corporations, 1965, 1968, and 1973



Source: Exhibit 6.

assets and more than 25% of sales which places Utilities on top of the list of all divisions, even ahead of Finance *(vid. infra)*. High concentration levels are underlined by the respective shares of the 100 largest, *viz.* almost 90% of assets and more than 66% of sales.

2316. Trade

Chart 25 shows that large corporations in Trade made significant gains in their shares of assets and sales in 1968/1973. They accounted for 17.4% of assets and for 14.7% of sales in 1973, up from, respectively, 14.7% and 12.2% in 1968. On the other hand, small trade corporations lost substantial shares in assets and sales, but still remained the dominant group. By 1973, one giant corporation, a wholesale company, had emerged with slightly more than $1 B in both assets and sales. Otherwise, retail corporations took the edge: in 1965, there were 7 retail corporations and 3 wholesale corporations in the $100-500 M group, in 1973 the ratio was 11 to 9 with an average asset size of $236 M and $173 M, respectively.

Inequality in the distributions of assets and sales was at very similar, medium levels but registered substantial increases in both distributions. Concentration in Trade is low but is steadily increasing (*vid.* Chart 26). The four largest trade corporations accounted for 10% in assets and 6% in sales in 1973, the 100 largest for 36% and 32%, respectively.

2317. Finance

By its very nature, the financial sector houses the majority of corporate assets in the Canadian economy. It is also a sector of extremes, similar to Utilities: a vast number of small insurance and real estate agencies on the one side and a few huge chartered banks and large trust companies on the other side. Trends in Chart 27 clearly show that large corporations dominate the financial sector at an expanding rate of growth: almost three-quarters of assets and more than one-half of sales[42] were held by this group in 1973, up by 7 and 2 percentage points, respectively,

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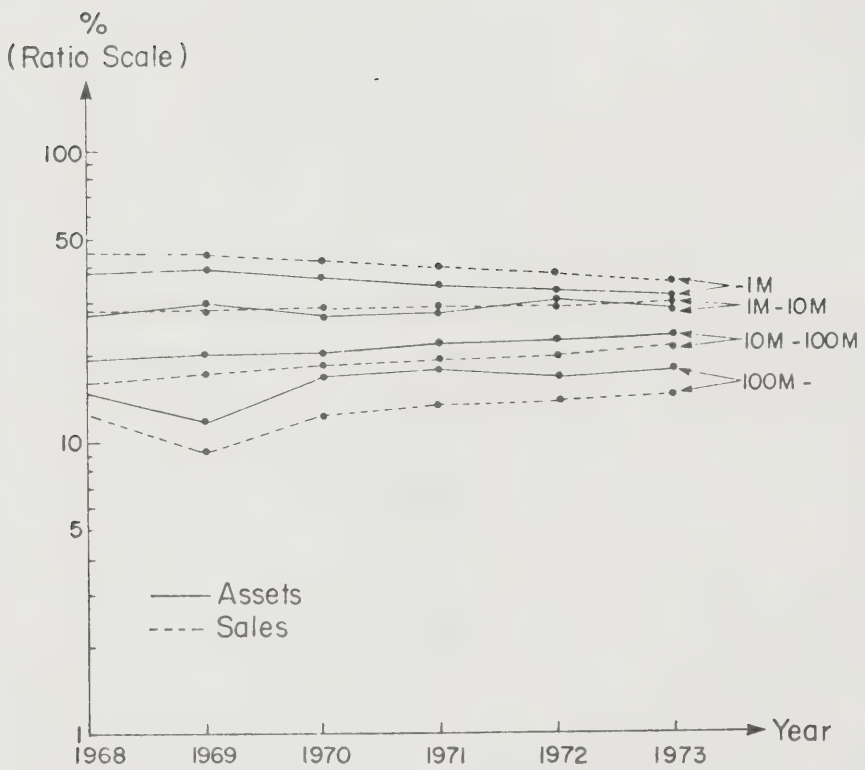
[42] To be interpreted as 'total revenue'.

Chart 25. Percentages of Assets and Sales in Canadian Wholesale and Retail Trade Industries, by Asset Size Class, 1968-1973



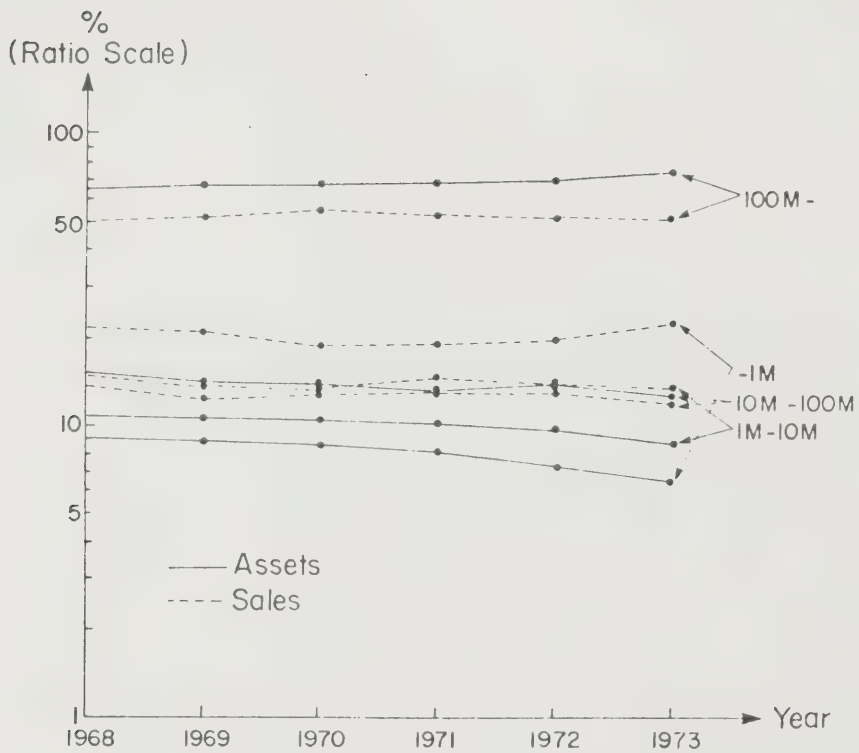
Source: Table 5.

Chart 26. Concentration of Assets and Sales in the 100 Largest Corporations in Canadian Wholesale and Retail Trade Industries, by Asset Size of Corporations, 1965, 1968, and 1973[a]

[a] Data for the 100 largest corporations not available for 1965.

Source: Exhibit 6.

Chart 27. Percentages of Assets and Sales in Canadian Financial Industries, by Asset Size Class, 1968-1973



Source: Table 5.

from 1968 levels. Even these figures would experience a considerable boost if insurance carriers were included (*vid. supra*). The 14 corporate giants with an average asset size of $6.2 B in 1973 accounted for more than one-half of assets and more than one-third of sales. It is also interesting to note that the average asset size in that group had risen by 72% since 1965. The growth of large corporations relative to small and medium-sized corporations led to a sharp increase in asset inequality, *viz.* by 17% to a high of 0.8487 in 1973; sales inequality remained stable at a considerably lower level.

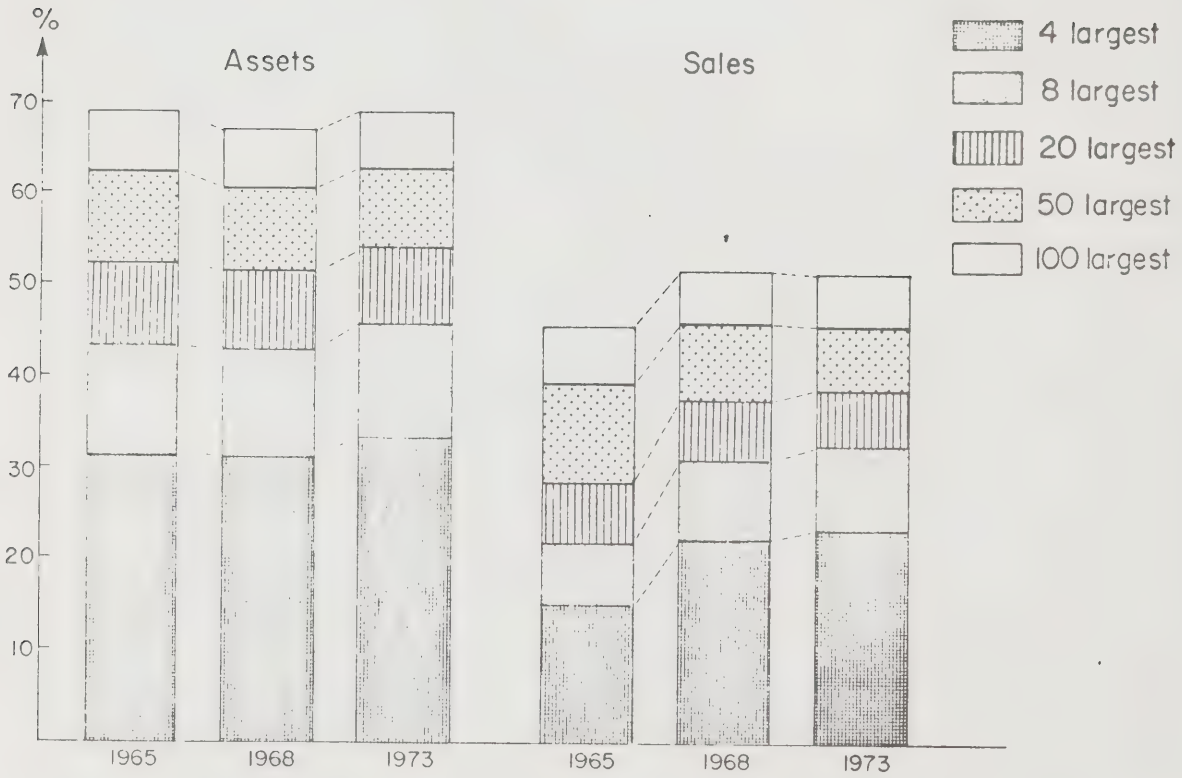
Concentration in Finance is high, although not as high as in Utilities (*vid.* Chart 28). Asset concentration for the four largest rose by 2 percentage points to 33% in 1973, and sales concentration registered a marked increase by 8 percentage points to 23%. The 100 largest accounted for almost 70% of assets and 57% of sales in 1973.

2318. Services

Like the construction industries, Services is still a domain of small corporations. Large corporations are not significant by any standards. Consequently, both inequality and concentration remain at very low levels. Nevertheless, there has been a shift of business activity from small to medium-sized firms as can be seen from Chart 29: in 1968/1973, the share of small corporations in assets declined by 12 percentage points to 40% and their sales' share by 11 percentage points to 63%. The majority of this latter loss was gained by the next size group which expanded by 8 percentage points to 25% of all sales. This means that corporations with assets of less than $10 M held 88% of sales in Services; their asset share stood at 70% in 1973.

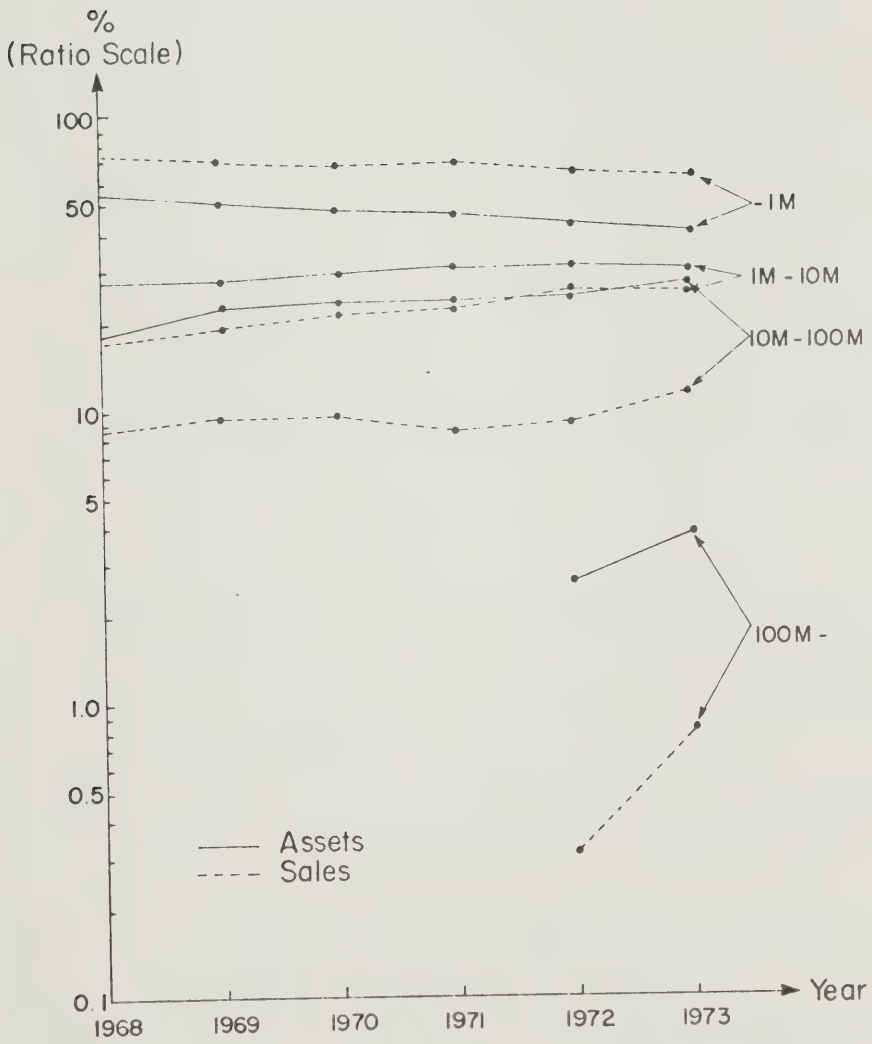
Inequality in assets and sales recorded slight declines to 0.3027 and 0.1512, respectively, with the latter level being the lowest among all divisions. Likewise, asset concentration for the four largest showed a slight decline to less than 5% in 1973 with sales concentration at 3%. Concentration for the 100 largest increased in 1965/1973 by approximately 4 percentage points to almost 30% for assets and by approximately 5 percentage points to 15% for sales (*vid.* Chart 30).

Chart 28. Concentration of Assets and Sales in the 100 Largest Financial Corporations in Canada, by Asset Size of Corporations, 1965, 1968, and 1973



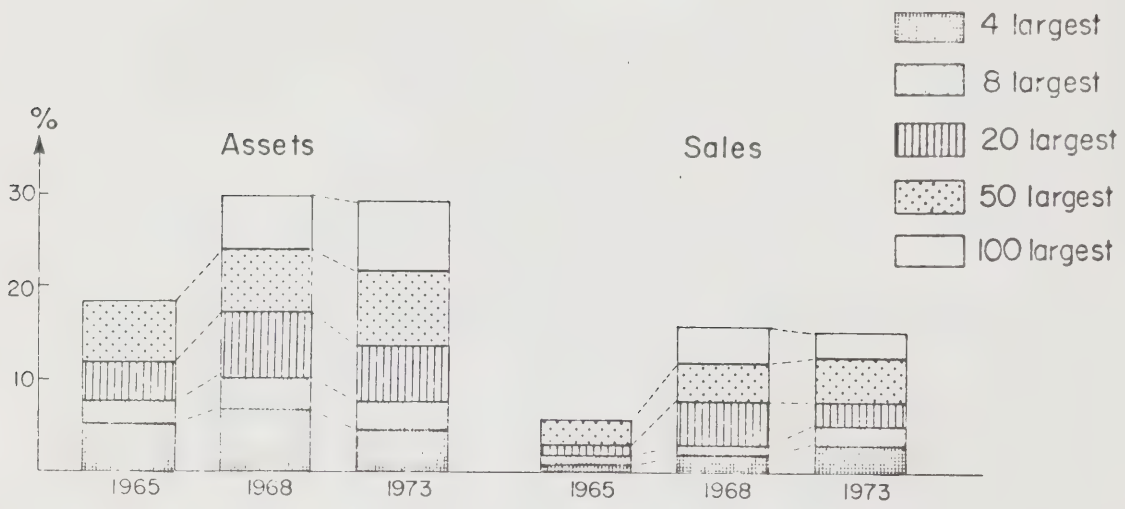
Source: Exhibit 6.

Chart 29. Percentages of Assets and Sales in Canadian Service Industries, by Asset Size Class, 1968-1973



Source: Table 5.

Chart 30. Concentration of Assets and Sales in the 100 Largest Corporations in Canadian Service Industries, by Asset Size of Corporations, 1965, 1968, and 1973[a]



[a]Data for the 100 largest corporations not available for 1965.

Source: Exhibit 6.

232. Cross-Divisional Comparisons

In order to facilitate divisional comparison of levels and trends of inequality and concentration several charts and synoptic tables are presented for an evaluation of magnitudes.

Major characteristics of the size distributions of corporations are summarized in Exhibit 7. It is interesting to note that Mining showed the highest average asset size per corporation in 1973 and also marked the greatest increase from 1965 levels, as can be seen from Chart 31. Utilities followed closely in second place with Manufacturing well behind but still ahead of Finance. However, moving to large corporations, the sequence is partially reversed with Utilities slightly ahead of Finance and, after a considerable gap, Mining and Manufacturing follow in average asset size. Finally, in the group of giant corporations Finance has the clear lead before Utilities. A perspective view of large corporations in the three asset groups beyond $100 M is presented in Chart 32.

With regard to inequality in the asset size distributions, Utilities showed the highest level, and Finance and Mining were next. There was a general tendency for asset inequality to increase in 1968/1973 with the exception of Agriculture/Forestry/Fishing, and of Services.

Concentration patterns for the 4 and 100 largest are summarized in Exhibit 8. A synoptic divisional presentation for 1965 is depicted in Charts 33 and 34 and for 1973 in Charts 35 and 36. It can be seen that sales concentration levels are generally less than asset concentration levels in all divisions except for the 100 largest in Mining.[43] The extent of this gap between asset concentration and sales concentration has been measured in terms of divergence in Exhibit 8.[44] The measurement of divergence reveals that in the majority of cases the gap between asset concentration and sales concentration was narrowing in 1968/1973.

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[43] Sales concentration levels would necessarily have been higher if corporations had been separately ranked by sales size.

[44] The divergence is calculated by the following procedure: the difference between asset concentration and sales concentration is divided by asset concentration, and the resulting fraction is expressed in percent.

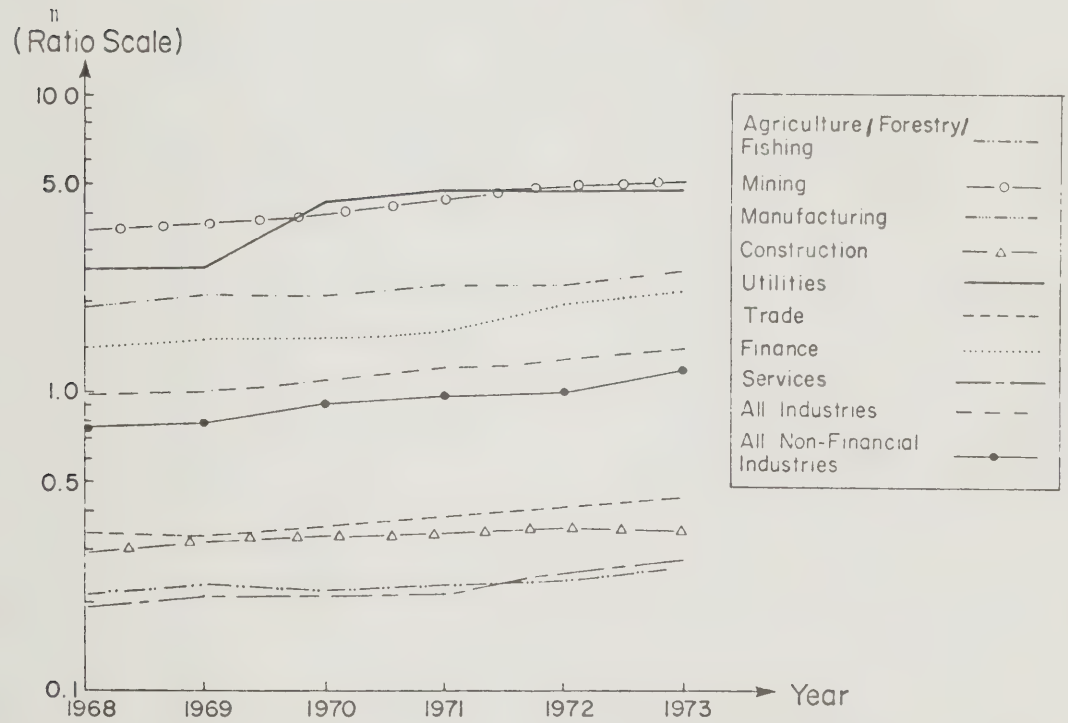
Exhibit 7. Average Asset Size of Corporations and Inequality in the Distribution of Assets and Sales (Gini Ratios) by Division, 1973, and Percent Changes, 1965/1973

Division	Average Asset Size of All Corporations		Average Asset Size of Corporations				Inequality			
			$100 M and over		$1 B and over			Change		Change
	$M	Change	$M	Change	$M	Change	Assets	1968/73	Sales	1968/73
Agriculture/ Forestry/Fishing	0.26	44%	-	-	-	-	0.1725	-12.9%	0.1664	13.1%
Mining	5.22	121%	301.2	43%	1,950.0[a]	...	0.7981	10.8%	0.8205	5.5%
Manufacturing	2.48	65%	291.2	14%	1,299.2	...	0.7020	6.7%	0.6282	11.4%
Construction	0.35	52%	171.0	-	-	-	0.3149	2.9%	0.1977	-0.3%
Utilities	4.80	116%	839.0	24%	3,522.9	33%	0.9131	14.5%	0.7338	15.4%
Trade	0.44	57%	245.9	80%	1,100.0[a]	...	0.4086	10.9%	0.3763	14.0%
Finance	2.20	57%	822.7	22%	6,247.7	73%	0.8487	17.4%	0.6334	1.4%
Services	0.27	69%	125.3	-	-	-	0.3027	-2.0%	0.1552	-1.7%
All Industries	1.38	59%	583.9	28%	4,317.6	29%	0.7532	12.0%	0.5067	10.8%
All Non-Financial Industries	1.02	57%	416.6	35%	2,516.3	-5%	0.6801	9.0%	0.5099	11.3%

a) Author's estimate.

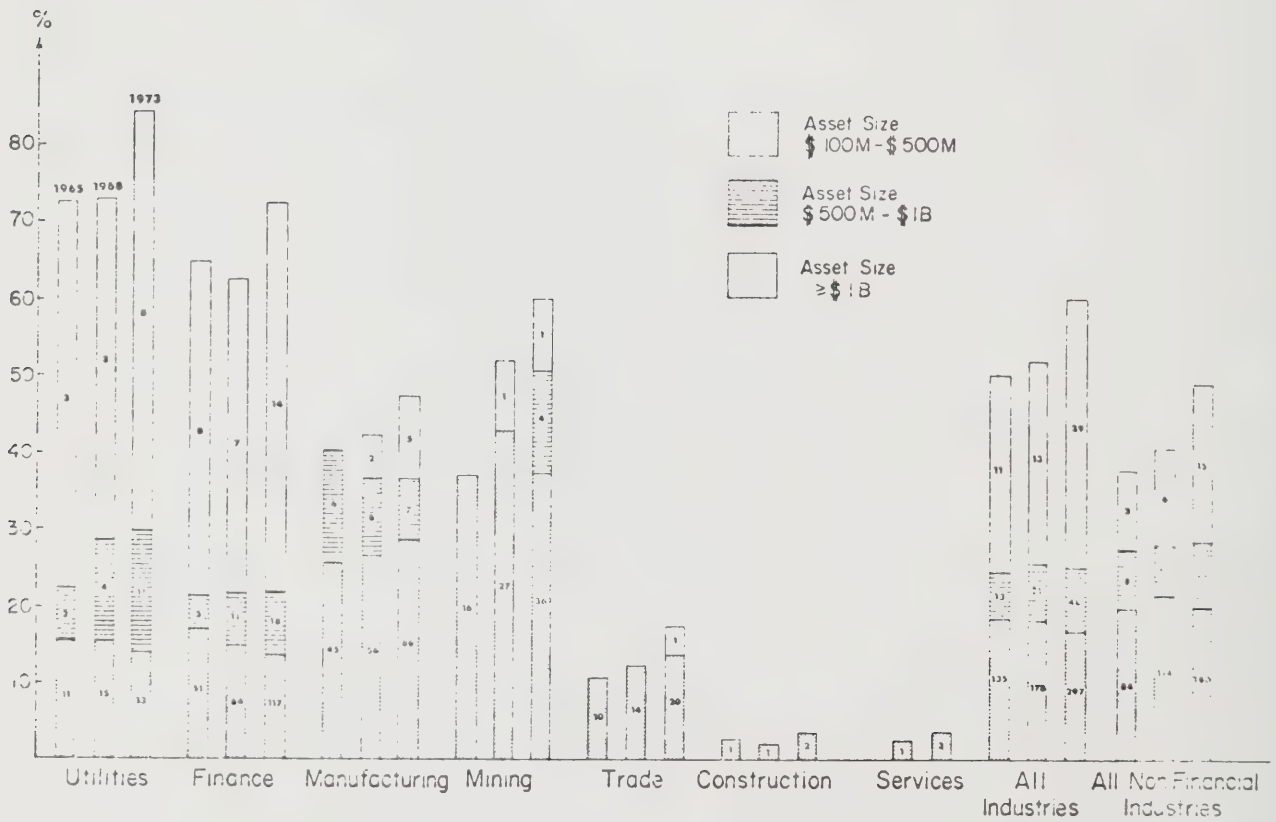
Sources: Tables 5-7.

Chart 31. Average Size of Corporations in Various Divisions of the Canadian Economy, by Assets, 1968-1973



Source: Table 5.

Chart 32. Number and Share Accounted for by Corporations with Assets in Excess of $100 M in Various Divisions of the Canadian Economy, by Asset Size Groups, 1965, 1968, and 1973



Source: Table 7.

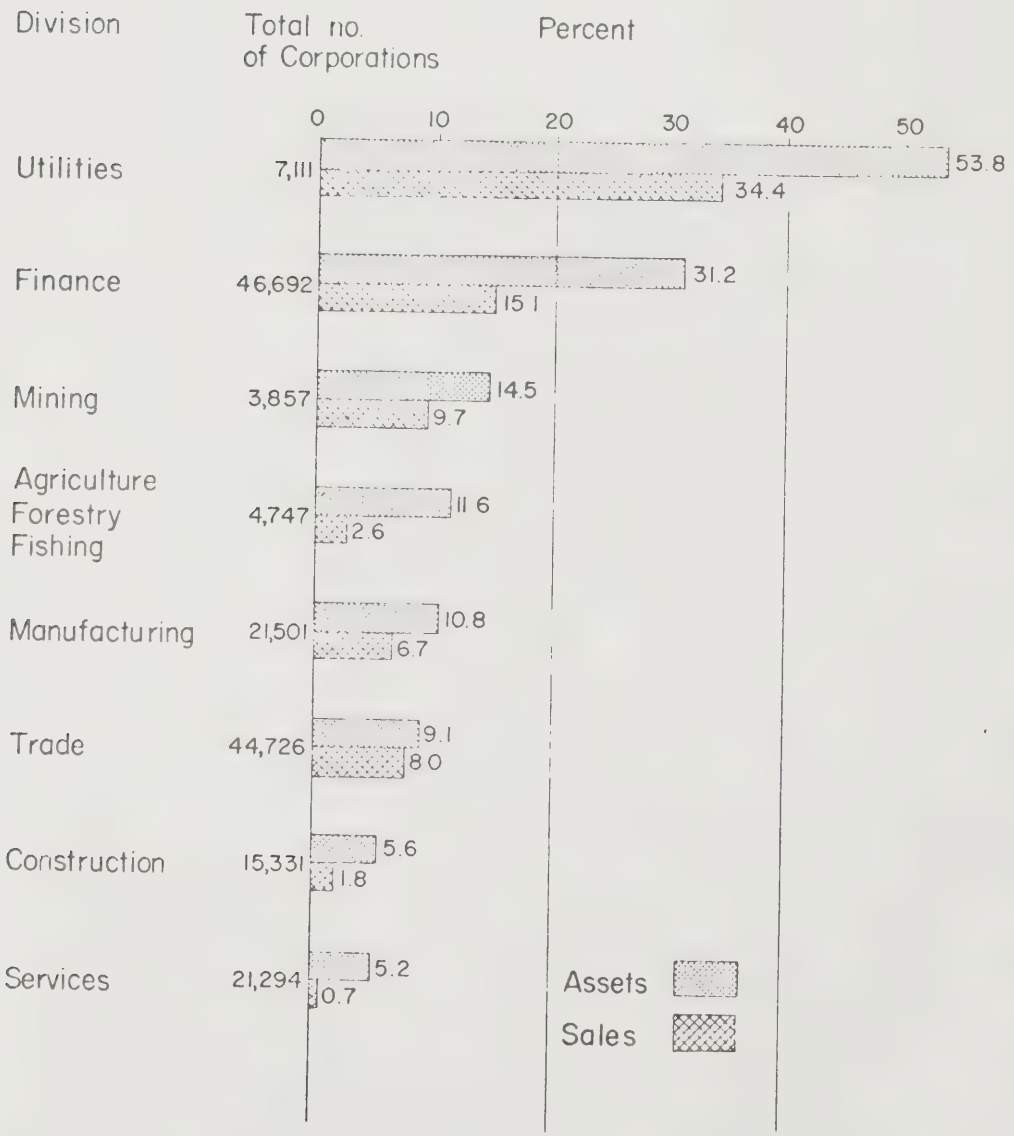
Exhibit 8. Asset Concentration, Sales Concentration, and Divergence between Asset and Sales Concentration, by Division, 1973, and Percentage Point Change in Concentration and Divergence, 1965/1973

Division	Top 4				Top 100				Divergence			
	Assets	Change	Sales	Change	Assets	Change	Sales	Change	Top 4	Change	Top 100	Change
Agriculture/ Forestry/Fishing	6.8	-4.8	3.3	0.7	22.6	-10.1	21.6	-0.7	51.5	-26.0	4.4	-27.4
Mining	20.4	5.9	17.4	7.7	77.7	5.2	81.0	5.8	14.7	-18.4	-4.2	0.5
Manufacturing	8.9	-1.9	6.5	-0.2	47.7	-3.5	39.1	0.1[a]	27.0	-9.0	18.0	-5.8[a]
Construction	5.7	0.1	1.8	-	31.9	1.9[a]	16.7	-5.3[a]	68.4	0.5	47.6	20.9[a]
Utilities	39.2	-14.6	26.0	-8.4	89.5	0.2	67.3	-0.5[a]	33.7	-2.4	24.8	0.7[a]
Trade	10.4	1.3	6.3	-1.7	36.0	3.0[a]	32.5	3.5[a]	39.4	18.3	9.7	-2.4[a]
Finance	33.2	2.0	23.2	8.1	69.1	0.2	51.0	5.6	30.1	-21.5	26.2	-7.9[a]
Services	4.6	-0.6	3.0	2.3	29.3	4.0[a]	15.3	4.4[a]	34.8	-51.7	47.8	-9.1[a]

a) Estimate.

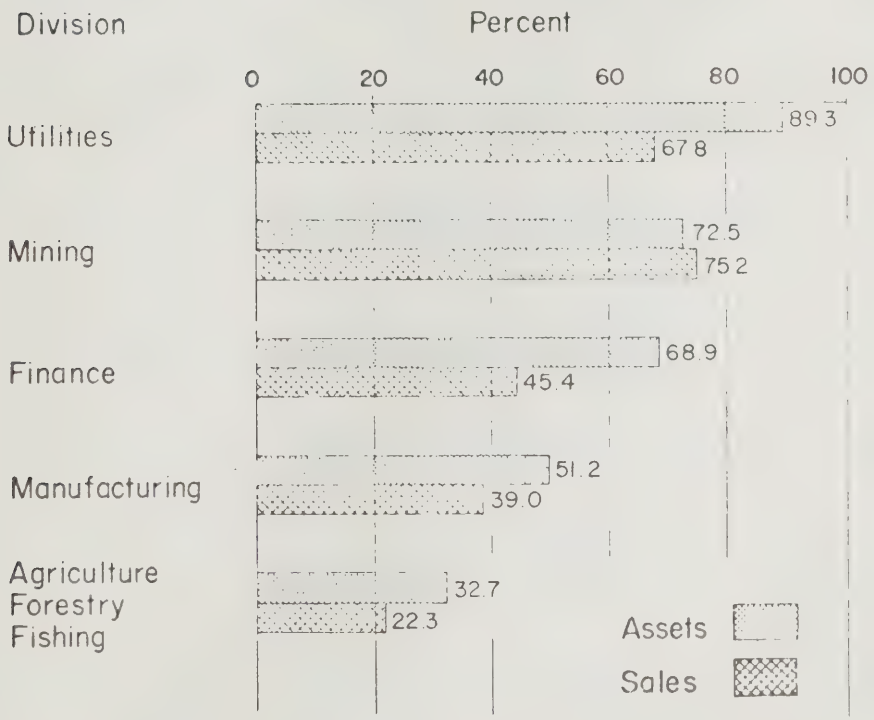
Source: Exhibit 6.

Chart 33. Shares of Assets and Sales Accounted for by the Four Largest Corporations in Various Divisions of the Canadian Economy, by Asset Size, 1965



Source: Exhibit 6.

Chart 34. Shares of Assets and Sales Accounted for by the 100 Largest Corporations in Various Divisions of the Canadian Economy, by Asset Size, 1965[a,b]

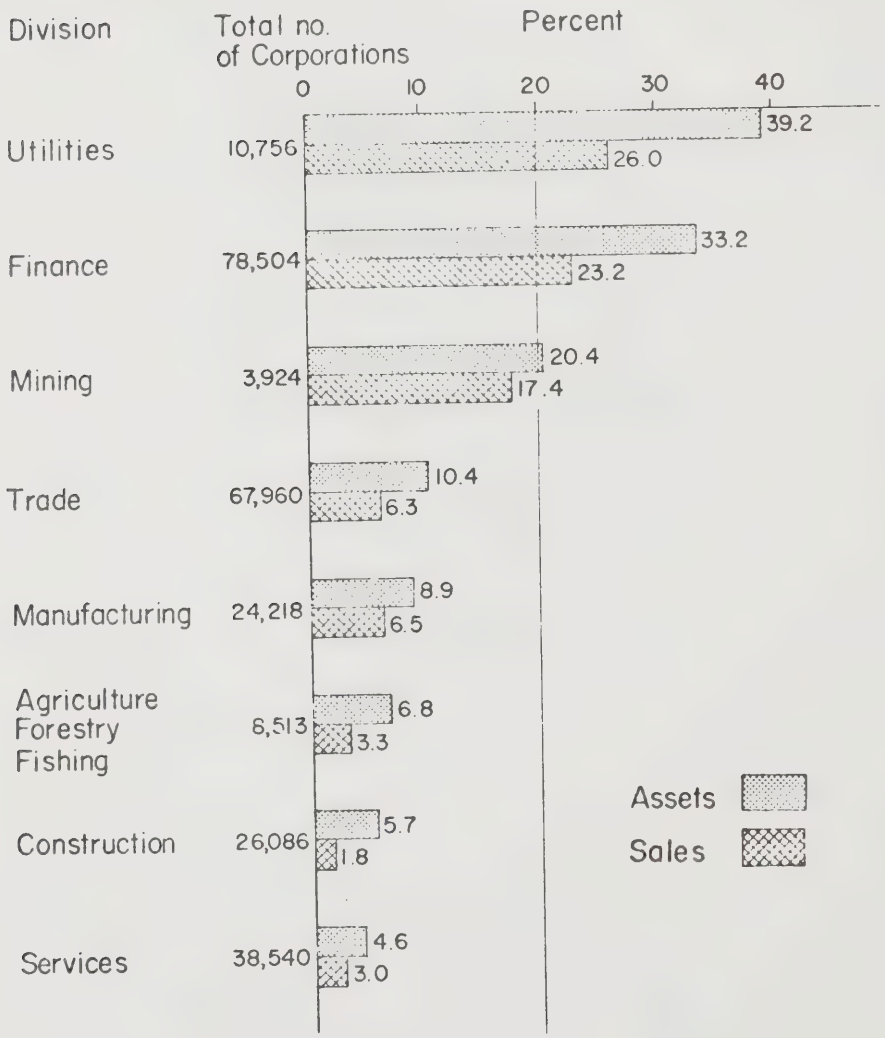


[a] No comparable data available for Construction, Trade, and Services.

[b] 95 largest corporations for Agriculture/Forestry/Fishing.

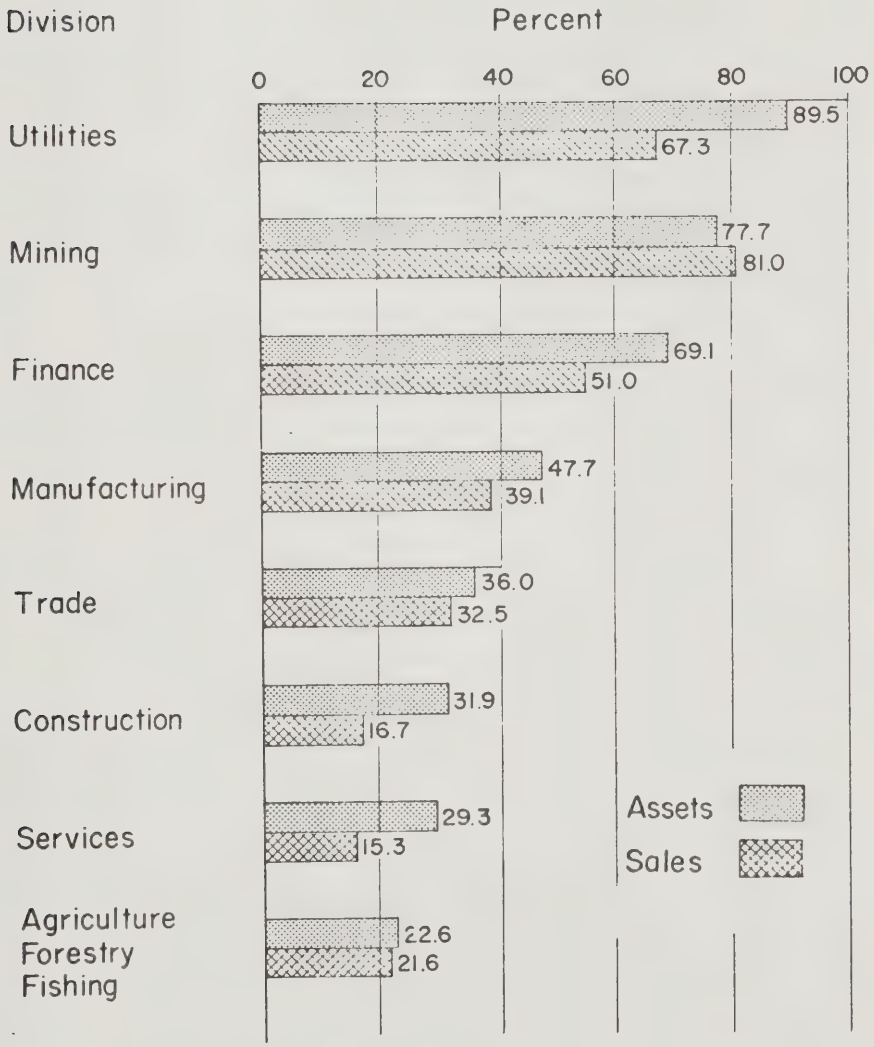
Source: Exhibit 6.

Chart 35. Shares of Assets and Sales Accounted for by the Four Largest Corporations in Various Divisions of the Canadian Economy, by Asset Size, 1973



Source: Exhibit 6.

Chart 36. Shares of Assets and Sales Accounted for by the 100 Largest Corporations in Various Divisions of the Canadian Economy, by Asset Size, 1973



Source: Exhibit 6.

In fact, there were only two cases of significant widening of divergence, *viz.* the 4 largest in Trade and the 100 largest in Construction.

A classification of divisions into high *vs.* low and moderately concentrated categories is a procedure that has to be treated with caution since no commonly accepted boundaries exist for high, medium, and low concentration and inequality. Rather, these classifications are flexible and will depend on the characteristics of the industry or division and on the level of aggregation of business activity. In this light, the following tentative categories are employed in order to evaluate divisions accordingly:

(i) Top-4 concentration ratio (assets)
- High: 25% and over
- Medium: 15%-25%
- Low: under 15%

(ii) Top-100 concentration ratio (assets)
- High: 50% and over
- Medium: 30%-50%
- Low: under 30%

(iii) Inequality (assets)
- High: 0.7 and over
- Medium: 0.4-0.7
- Low: under 0.4

The respective classifications of divisions are presented in Exhibit 9 and their subsequent rankings in Exhibit 10. The classification should be interpreted in a relative way, *i.e.* in interdivisional perspective, and takes into account the full spectrum of the aforementioned structural criteria such as inequality, concentration ratios, divergence and presence or absence of corporate giants. The classification of divisions at the extremes of the spectrum seems to be straightforward: Utilities, Finance, and Mining are highly concentrated divisions, whereas Agriculture/Forestry/Fishing and Services are divisions with low concentration. To classify Manufacturing and Construction into one of the categories is more difficult. However, for all practical purposes, the following scheme is suggested in descending order within the three categories:

Exhibit 9. Classification of 1973 Levels and of 1965/1973 Trends of Inequality in the Distribution of Assets, Asset Concentration, and Divergence between Asset and Sales Concentration

Division	Inequality		Concentration				Divergence	
			Top 4		Top 100			
	Level	Trend	Level	Trend	Level	Trend	Trend Top 4	Trend Top 100
Agriculture/ Forestry/Fishing	Low	Decline	Low	Decline	Low	Decline	Narrowing	Narrowing
Mining	High	Increase	Medium	Increase	High	Increase	Narrowing	Widening
Manufacturing	High	Increase	Low	Decline	Medium	Decline	Narrowing	Narrowing
Construction	Low	Increase	Low	Increase	Medium	Increase	Widening	Widening
Utilities	High	Increase	High	Decline	High	Increase	Narrowing	Widening
Trade	Medium	Increase	Low	Increase	Medium	Increase	Widening	Narrowing
Finance	High	Increase	High	Increase	High	Increase	Narrowing	Narrowing
Services	Low	Decline	Low	Decline	Low	Increase	Narrowing	Narrowing

Sources: Exhibits 7 and 8.

Exhibit 10. Divisional Ranking by Levels of Inequality in the Distribution of Assets and of Asset Concentration, 1965 and 1973

Division	Inequality		Concentration			
			Top 4		Top 100	
	1968	1973	1965	1973	1965	1973
Agriculture/ Forestry/Fishing	8	8	4	6	6	8
Mining	3	3	3	3	2	2
Manufacturing	4	4	5	5	4	4
Construction	7	6	7	7	7[a]	6
Utilities	1	1	1	1	1	1
Trade	5	5	6	4	5[a]	5
Finance	2	2	2	2	3	3
Services	6	7	8	8	8[a]	7

a) Estimates.

Sources: Table 6; Exhibits 6-8.

(i) Highly concentrated divisions:

Utilities

Finance

Mining

(ii) Moderately concentrated divisions:

Manufacturing

Trade

Construction

(iii) Divisions of low concentration:

Services

Agriculture/Forestry/Fishing

Chapter 3

Concentration Levels and Trends in Canadian Manufacturing Industries, 1965-1972

31. Description of the Data

Concentration statistics for Canadian manufacturing industries are exceptionally detailed, and, beginning with pioneering studies by Rosenbluth [47; 48; 49] extend back as far as 1948. A background study for the Economic Council of Canada by Stewart presented concentration data for 1964 [63]. However, the pivotal point was reached in the publication of the concentration report by the Department of Consumer and Corporate Affairs with concentration data for 1965 [12]. This publication prompted a regular biennial program by Statistics Canada based on the Census of Manufactures and starting with the year 1968 with historical data for 1965 [56; 57; 58]. Besides complete coverage of the manufacturing division, the Statistics Canada data include major parts of the divisions of mining and of forestry from 1968 onwards.

A synoptic overview of the available data with regard to concentration measures, unit of business activity, tabulating unit, and coverage is presented in Exhibits 11-13. Despite the abundance of concentration data, their intertemporal comparability is seriously curtailed by conceptual and technical changes in the statistical definitions and classifications. Among others, changes in (i) the Standard Industrial Classification Code, (ii) the definition of the enterprise as the tabulating unit,[45] and (iii) the coverage of the universe are the main causes for incomparability or limited comparability only. These changes make an establishment of a

[45] For 1948 and 1964, a "firm" is taken to be all establishments in a single manufacturing industry operated by one company. From 1965 onwards, an "enterprise" in the unconsolidated approach (*vid. infra*) is defined as all establishments in a single industry which are under common control [64, p.175].

Exhibit 11. Available Concentration Data for Canadian Manufacturing Industries, Summary Basis

Criterion / Concentration Measure			
1948	Top-3 Ratio, Inverse Ratio, Hirschman-Herfindahl Index[1]		
Measure of Business Activity	Employment		
Tabulating Unit	Firm		
Coverage	96 Industries		
1964	Inverse Ratio[2]	Inverse Ratio[3]	Inverse Ratio[4] (Mining)
Measure of Business Activity	Value of Shipments	Value of Shipments	Value of Production
Tabulating Unit	Establishment	Establishment, Firm	Firm
Coverage	181 Industries	20 Major Ind. Groups Each	46 Minerals
1965	Inverse Ratio, Top-4 Ratio[5]	Inverse Ratio, Top-4 Ratio[6]	Inverse Ratio[7]
Measure of Business Activity	Value of Shipments, Value added, Employment	Value of Shipments	Value of Shipments, Value added
Tabulating Unit	Enterprise	Enterprise	Establishment
Coverage	154 Industries[a]	20 Major Ind. Groups Each	154 Industries[a]
1968, 1970, 1972 (including Mining & Logging)		Top-4 Ratio[8]	
Measure of Business Activity		Value of Shipments, Value added	
Tabulating Unit		Enterprise	
Coverage		21 Major Ind. Groups Each	

a) Of a total of 184 industries.

1) Rosenbluth [49, p.12].
2) Stewart [63, p.45].
3) Stewart [63, pp.49-50].
4) Stewart [63, p.36].
5) Canada [12, pp.17,23].
6) Canada [12, pp.20,25].
7) Canada [12, p.29].
8) Statistics Canada [56, pp.18-19; 57, pp.16-17; 58].

Exhibit 12. Available Concentration Data for Canadian Manufacturing Industries, Industry Basis

Criterion / Concentration Measure				
1948	Top-3 Ratio[1]	Top-4 Ratio[2]	Inverse Ratio[3]	Hirschman-Herfindahl Index[4]
Measure of Business Activity	Employment	Employment	Employment	Employment, Output
Tabulating Unit	Firm	Firm	Firm, Plant	Firm
Coverage	96 Industries	41 Industries	96 Industries	96 Industries
1964	Inverse Ratio[5]			
Measure of Business Activity	Value of Shipments			
Tabulating Unit	Firm, Establishment			
Coverage	181 Industries			
1950, 1960, 1964 (Mining)	Top-4 Ratio, Top-8 Ratio[6]		Inverse Ratio[6]	
Measure of Business Activity	Value of Production		Volume of Production/Shipments	
Tabulating Unit	Establishment, Firm (1964 only)		Firm (1964 only)	
Coverage	17 Minerals		18 Minerals	
1965	Top-4 - Top-50 Ratios, Hirschman-Herfindahl Index[7]		Inverse Ratio[8]	
Measure of Business Activity	Value of Shipments, Value Added, Employment		Value of Shipments, Employment	
Tabulating Unit	Enterprise, Establishment		Enterprise, Establishment	
Coverage	159 Industries[a]		159 Industries[a]	

Exhibit 12 continued

1968, 1970, 1972 (including Mining & Logging)

	Top-4 - Top-50 Ratios[9]	Hirschman-Herfindahl Index[10]
Measure of Business Activity	Value of Shipments, Value Added, Employment	Value of Shipments, Value Added, Employment
Tabulating Unit	Enterprise, Establishment	Enterprise
Coverage		
1968:	Manufacturing:	171 Industries
	Mining:	15 Industries
	Logging:	1 Industry
1970, 1972:	Manufacturing:	171 Industries
	Mining:	20 Industries (1972:19)
	Logging:	2 Industries

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a) Of a total of 184 industries and accounting for 94% of total value added.
1) Rosenbluth [49, pp.111-113].
2) Rosenbluth [49, pp.89-90].
3) Rosenbluth [49, pp.111-113, 117-120].
4) Rosenbluth [49, pp.111-113].
5) Stewart [63, pp. 85-95].
6) Stewart [63, p.37].
7) Canada [12, Tables A1-A4].
8) Canada [12, Tables A1&A3].
9) Statistics Canada [56, Tables 1&3; 57, Tables 1&3; 58].
10) Statistics Canada [56, Table 5; 57, Table 4; 58].

Exhibit 13. Available Concentration Data for Canadian Manufacturing Industries, Historical Basis (Comparable Data on Industry Basis)

Criterion / Concentration Measure	
1948/1965	Inverse Ratio[1]
Measure of Business Activity	Employment
Tabulating Unit	Firm/Enterprise, Establishment
Coverage	40 Industries
1965/1968/1970/1972	Top-4 - Top-50 Ratios, Hirschman-Herfindahl Index[2]
Measure of Business Activity	Value of Shipments
Tabulating Unit	Enterprise[a]
Coverage	129 Industries
1968/1970/1972 (including Mining & Logging)	Top-4 - Top-50 Ratios[3]
Measure of Business Activity	Value of Shipments, Value Added, Employment
Tabulating Unit	Enterprise
Coverage	Manufacturing: 144 Industries Mining: 18 Industries Logging: 1 Industry

a) On the establishment level, top-4 - top-50 ratios have also been published in each of the years and for a whole array of business data. For all practical purposes, these concentration data represent a comparable series.

1) Canada [12, p.45].
2) Statistics Canada [57, Table 2; 58].
3) Special recompilation of 1968 concentration data by Statistics Canada.

definitionally comparable time series of concentration trends prior to 1965 almost impossible.[46] Thus, definitionally comparable concentration data in historical perspective as listed in Exhibit 13 shrink considerably in scope. The year 1965 assumes a pivotal position, again, inasmuch as the CCA Study provides a linkage to 1948. Unfortunately, the sample of 40 comparable industries represents only 28% of total manufacturing value added in 1965 [12, p.43], and it includes only one of the 'large' industries, *viz.* "Pulp and Paper" (SIC 271). Moreover, a kind of forward linkage is difficult to achieve because of the different concentration measures involved: an estimation of concentration ratios from inverse ratios (or *vice versa*) would be a doubtful procedure.

For the period 1965-1972, detailed analysis of definitionally comparable data is possible for 129 manufacturing industries on the (unconsolidated) enterprise level. These concentration data are expressed in terms of (i) value-of-shipment concentration ratios for the 4, 8, 12, 16, 20, and 50 largest enterprises, and related ratios for various other measures of business activity (value added, employment, etc.), and (ii) the Hirschman-Herfindahl index (H-Index) in terms of the three aforementioned measures of business activity. As was already mentioned, top-4 ratios and/or subsequent ratios are missing for a number of industries because of confidentiality rules, whereas the H-Index by its very nature as summary measure is unaffected by confidentiality rules and, thus, represents a complete set. In addition to enterprise concentration data, there are also tabulations of concentration data on the establishment level for 1965-1972 in terms of concentration ratios and, for 1965 and 1972 only, in terms of the H-Index.[47] Apart from an intertemporal analysis of

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[46] At the time of writing, there is a study in progress in the Research Branch of the Department of Consumer and Corporate Affairs to analyze the determinants of changes in industrial concentration for a sample of 67 definitionally comparable industries during 1948-1972 for the years 1948, 1954, 1958, 1965, 1968, 1970, and 1972 [34].

[47] For 1968 and 1970, H-Indexes can be computed from Niehans indexes (in terms of employment) available from the Manufacturing and Primary Industries Division of Statistics Canada.

establishment concentration levels, this allows for an assessment of levels and trends of divergence between enterprise and establishment concentration in Canadian manufacturing industries.

Concentration data for 1965, 1968, 1970, and 1972 are based on their respective Census of Manufactures. The establishment is the basic statistical unit for which the data on business activity such as, *e.g.*, employment value added, and value of shipments are gathered. Subsequently, the data are aggregated into enterprise groupings with an enterprise consisting of all establishments under common control. The definition of common control in the sense of majority control, *i.e.* ownership of 50% or more, has been steadily refined with the help of CALURA data on intercorporate ownership [*cf.* 56, pp.8, 175-177; 57, pp.7-8]. A thus defined enterprise may appear as a separate entity in more than one industry according to the classification of its establishments. This is the so-called 'unconsolidated enterprise' which serves as the tabulating unit in the presentation of the concentration data [*cf.* 56, pp.8-9].

In addition to concentration data and taking account of the increasing trend of diversification, Statistics Canada presents a set of financial data for enterprises that are classified as a whole to the industry that accounts for the largest proportion of its value added. These "consolidated enterprises" and their classifications into groups of single *vs.* multi-establishment firms and single *vs.* multi-industry firms provide most interesting insight views into the extent of conglomerateness.

32. Concentration and Diversification in the Manufacturing Sector as a Whole

Value-added concentration ratios[48] for the 4, 8, 20, 50, and 100 largest enterprises are presented in Exhibit 14 and are plotted in Chart 37. In contrast to the aggregate asset concentration ratios in Exhibit 6, the former ratios include majority control. Yet, the similarity of

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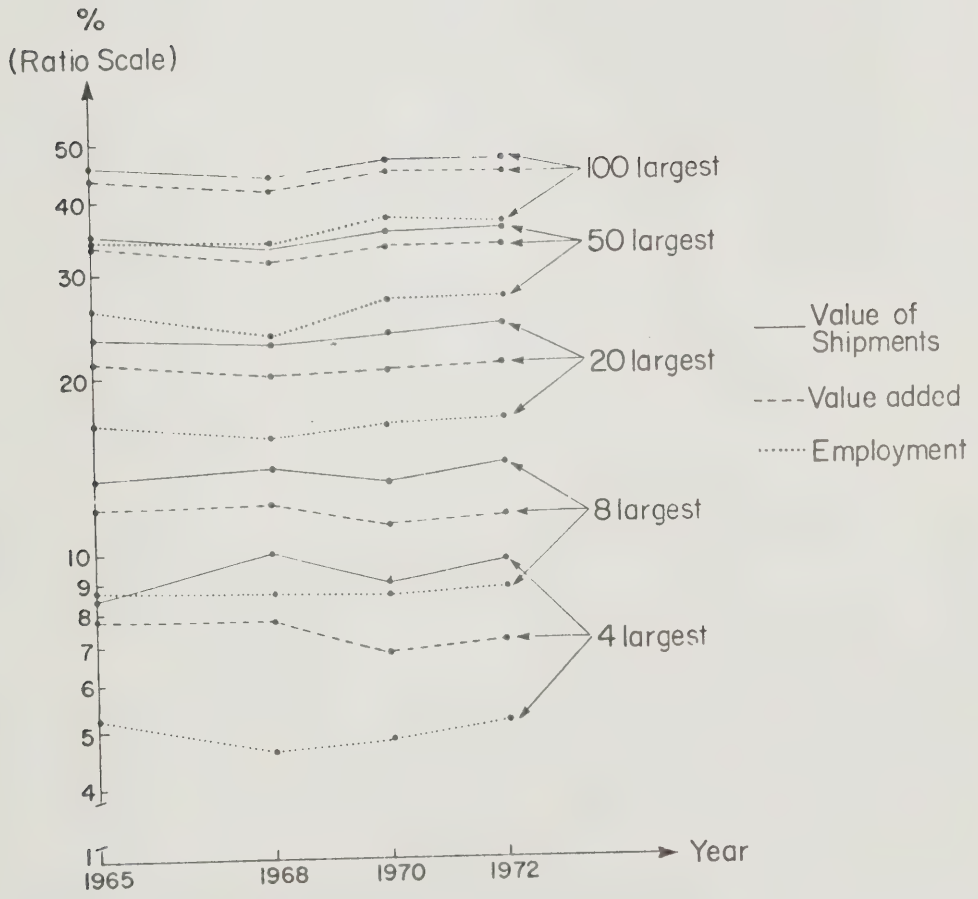
[48] Enterprises are ordered in terms of manufacturing value added and their respective share in manufacturing value added, value of shipments, and employment is calculated.

Exhibit 14. Shares of Value of Shipments (S), Value Added (V), and Employment (E), Accounted for by the 4, 8, 20, 50, and 100 Largest Canadian Manufacturing Enterprises, Ordered by Manufacturing Value Added, 1965-1972

Year	4 Largest			8 Largest			20 Largest			50 Largest			100 Largest		
	S	V	E	S	V	E	S	V	E	S	V	E	S	V	E
1965	8.4	7.7	5.2	13.3	12.0	8.6	23.1	21.1	16.6	34.8	33.4	26.0	45.2	43.6	34.5
1968	10.0	7.7	4.6	14.0	12.1	8.6	22.7	20.1	15.8	33.3	31.4	23.7	43.9	41.8	33.6
1970	8.9	6.8	4.8	13.3	11.2	8.5	23.6	20.7	16.8	35.1	33.6	27.0	46.9	45.0	37.1
1972	9.7	7.1	5.2	14.4	11.6	8.8	24.3	21.0	17.0	35.4	33.6	27.4	47.0	44.9	36.4

Sources: Statistics Canada [56, p.17; 57, p.15; 58].

Chart 37. Shares of Value of Shipments, Value Added, and Employment Accounted for by the 4, 8, 20, 50, and 100 Largest Canadian Manufacturing Enterprises, Ordered by Manufacturing Value Added, 1965-1972



Source: Table 14.

concentration levels in the two sets of data is striking. During 1965/1972, top-4 value-added concentration declined slightly, employment concentration remained unchanged, and shipment concentration increased. A consistent increase of concentration can be observed for the top 100.

The extent of diversification as an indicator of conglomerateness in manufacturing industries can be logically shown in two steps, *viz.* separating (i) single-establishment enterprises (S.E.E.) and multi-establishment enterprises (M.E.E.) and, subsequently, (ii) single-industry enterprises (S.I.E.) and multi-industry enterprises (M.I.E.). The target group in this stepwise classification is the one of M.I.E.'s consisting necessarily of M.E.E.'s only. A glance at Exhibit 15 proves the overwhelming importance of M.I.E.'s: although they are very small in number, they account for the majority in manufacturing value added.

With regard to single *vs.* multi-establishment enterprises, the unconsolidated enterprise data in Exhibit 15 show that in 1965 approximately 3% of all enterprises were M.E.E.'s and accounted for almost 60% of total manufacturing value added (MVA). By 1972, M.E.E.'s had increased slightly in terms of the share of numbers of enterprises but had experienced a marked decline of almost 6 percentage points to less than 54% of total MVA since their growth in MVA in 1965/1972 stood at only 64% as compared to 108% for S.E.E.'s. The respective trends of M.E.E.'s compared to trends for all enterprises have been traced in Chart 38.

Turning to single *vs.* multi-industry enterprises, the intertemporal comparison of the data in Exhibit 15 has to be treated with caution: for 1970 and 1972, the enterprise definition was broadened to include firms going beyond the first foreign parent. Moreover, the universe was expanded to include mining and logging industries from 1970 onwards. Thus, levels and trends have to be compared separately for 1965/1968 and for 1970/1972. This is indicated by a discontinuity in Chart 39. In 1965, M.I.E.'s accounted for 1.5% in the number of all enterprises and for almost 51% of MVA; during 1965/68, the growth of MVA in M.I.E.'s was almost five percentage points ahead of that for S.I.E.'s and, thus, M.I.E.'s could expand their territory by one percentage point.

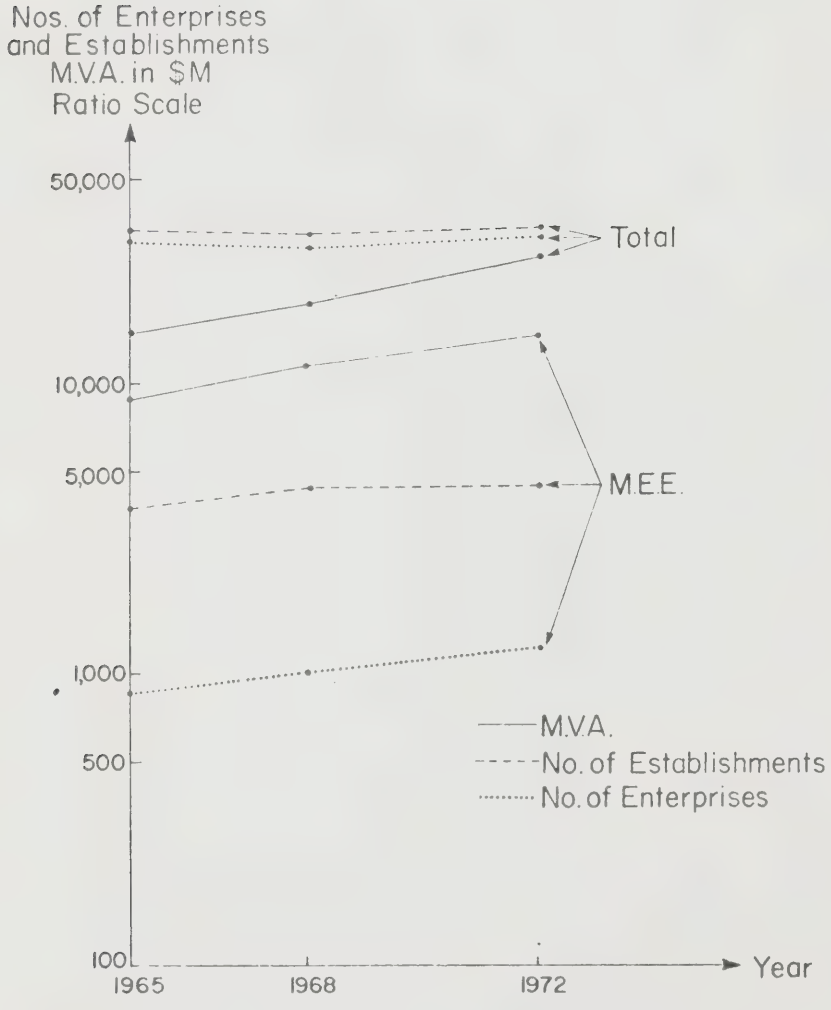
Exhibit 15. The Extent of Diversification in Canadian Manufacturing Industries, Single vs. Multi-Establishment Enterprises and Single vs. Multi-Industry Enterprises, 1965-1972

	1965						1968					
	No. of Ent.	Per-cent	No. of Est.	Per-cent	MVA $M	Per-cent	No. of Ent.	Per-cent	No. of Est.	Per-cent	MVA $M	Per-cent
Single-establishment enterprises[a]	29,547	97.2	29,547	88.7	6,060	40.6	28,265	96.5	28,265	86.6	7,042	38.4
Multi-establishment enterprises[a]	847	2.8	3,763	11.3	8,868	59.4	1,016	3.5	4,378	13.4	11,290	61.6
Total	30,394	100.0	33,310	100.0	14,928	100.0	29,281	100.0	32,643	100.0	18,332	100.0
Single-industry enterprises[b]	29,953	98.5	30,769	92.4	7,369	49.4	28,755	98.2	29,656	90.8	8,885	48.5
Multi-industry enterprises[b]	441	1.5	2,541	7.6	7,559	50.6	526	1.8	2,987	9.2	9,447	51.5
Total	30,394	100.0	33,310	100.0	14,928	100.0	29,281	100.0	32,643	100.0	18,332	100.0
	1970						1972					
Single-establishment enterprises[a]	. .		. .		. .		30,445	96.1	30,445	87.3	12,612	46.4
Multi-establishment enterprises[a]	. .		. .		. .		1,245	3.9	4,438	12.7	14,581	53.6
Total	. .		35,136	100.0	22,978	100.0	31,690	100.0	34,883	100.0	27,193	100.0
Single-industry enterprises[b]	29,256	96.9	30,004	85.4	7,911	34.4	28,913	97.0	29,709	85.2	9,462	34.8
Multi-industry enterprises[b]	927	3.1	5,132	14.6	15,067	65.6	899	3.0	5,174	14.8	17,731	65.2
Total	30,183	100.0	35,136	100.0	22,978	100.0	29,812	100.0	34,883	100.0	27,193	100.0

a) Unconsolidated. b) Consolidated.

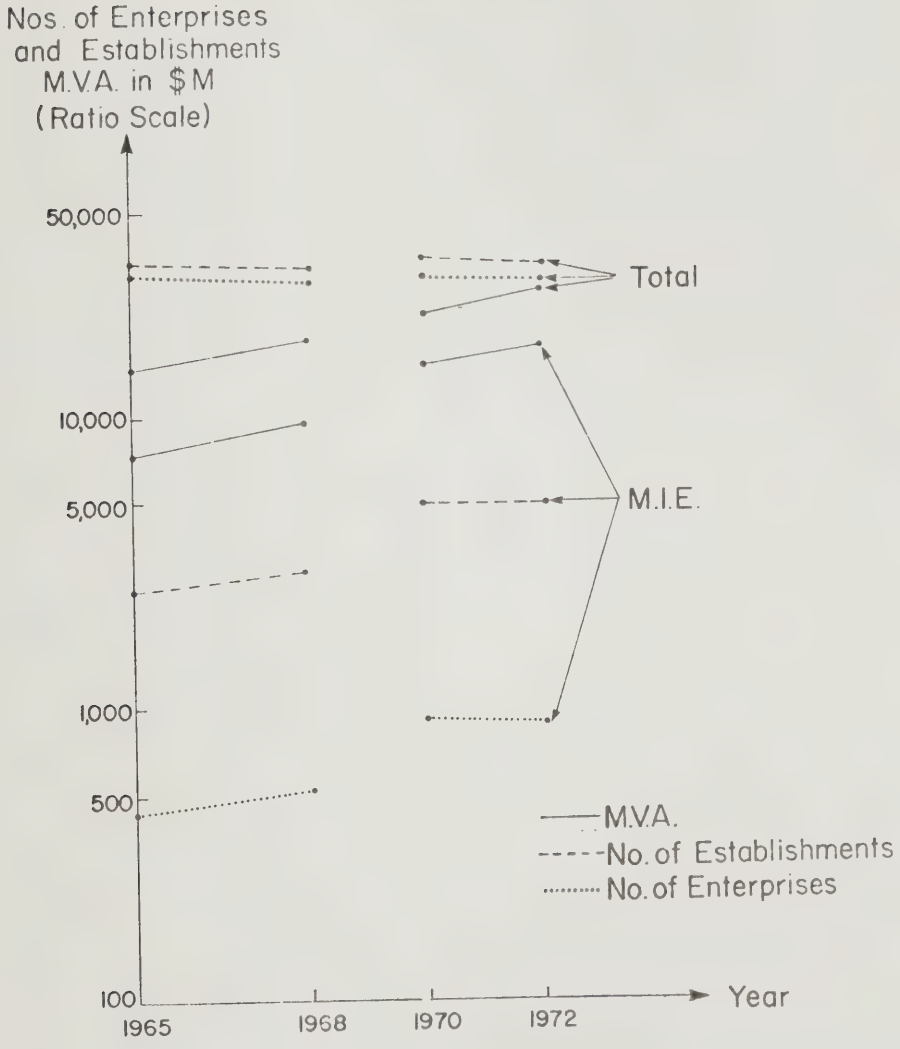
Sources: McVey [41, p.114]; data for 1970 and 1972 were communicated direct by the Multinational Enterprises Section, Financial Flows and Multinational Enterprises Division, Statistics Canada, Ottawa.

Chart 38. Multi-Establishment Enterprises (M.E.E.) in Canadian Manufacturing Industries: Numbers of Enterprises and Establishments and Manufacturing Value Added (M.V.A.), 1965-1972



Source: Exhibit 15.

Chart 39. Multi-Industry Enterprises (M.I.E.) in Canadian Manufacturing Industries: Numbers of Enterprises and Establishments and Manufacturing Value Added (M.V.A.), 1965/1968 and 1970/1972[a]



[a]The series are not comparable since 1965/1968 pertains to Manufacturing only whereas 1970/1972 includes Mining and Logging and the enterprise definition was broadened to include firms going beyond the first foreign parent.

Source: Exhibit 15.

With regard to the 1970/72 set of data, levels are almost identical for the two years, *viz.* M.I.E.'s account for 3% in numbers of enterprises and for almost two-thirds of total MVA. This means that only little more than one-third of MVA was left to the approximately 29,000 S.I.E.'s, which is perhaps the best indicator of the importance of diversified enterprises in Canadian manufacturing industries.

The extent of conglomerateness is presented in Exhibit 16 and in Charts 40 and 41 in terms of the numbers of industries in which M.I.E.'s had operations. Again, the figures for 1965 on the one hand and for 1970 and 1972 on the other hand are not comparable because of the aforementioned differences. In 1965, the first place went to a conglomerate with 80 establishments operating in 18 different industries [12, p.16]. Seven enterprises, with a total of 307 establishments, had spread their activities to more than eight industries and accounted for 6.4% of all manufacturing shipments [12, p.16]. With enterprises in 1970/1972, these proportions increased greatly. A glance at Exhibit 16 shows that there was a conglomerate giant in both 1970 and 1972 with more than 100 establishments and operating in more than 20 different industries. Most probably, it was the same firm taking the lead in all of the three years under observation. In 1970, 16 enterprises with a total of 705 establishments operated in more than 10 industries and together accounted for more than 30% of total MVA; by 1972, there were 18 enterprises with 819 establishments altogether and they accounted for slightly less than 30% of total MVA in this category. For the entire 1965/72 period, the average number of establishments per firm of the enterprises with operations in more than 10 industries declined from 61 in 1965 to 44 in 1970 and increased slightly (to 45) in 1972.

33. Summary Analysis and Classification of Concentration Levels and Trends for All Manufacturing Industries by Industry Groups

331. Levels of Enterprise Concentration, 1965 and 1972

Among the available concentration ratios, the top-4 value-of-shipment concentration ratio has been selected as the reference measure in the present analysis. According to Exhibit 17, the classification of

Exhibit 16. The Extent of Diversification in Canadian Manufacturing Industries: Enterprises by Numbers of Industries in which they had Operations, 1965-1972

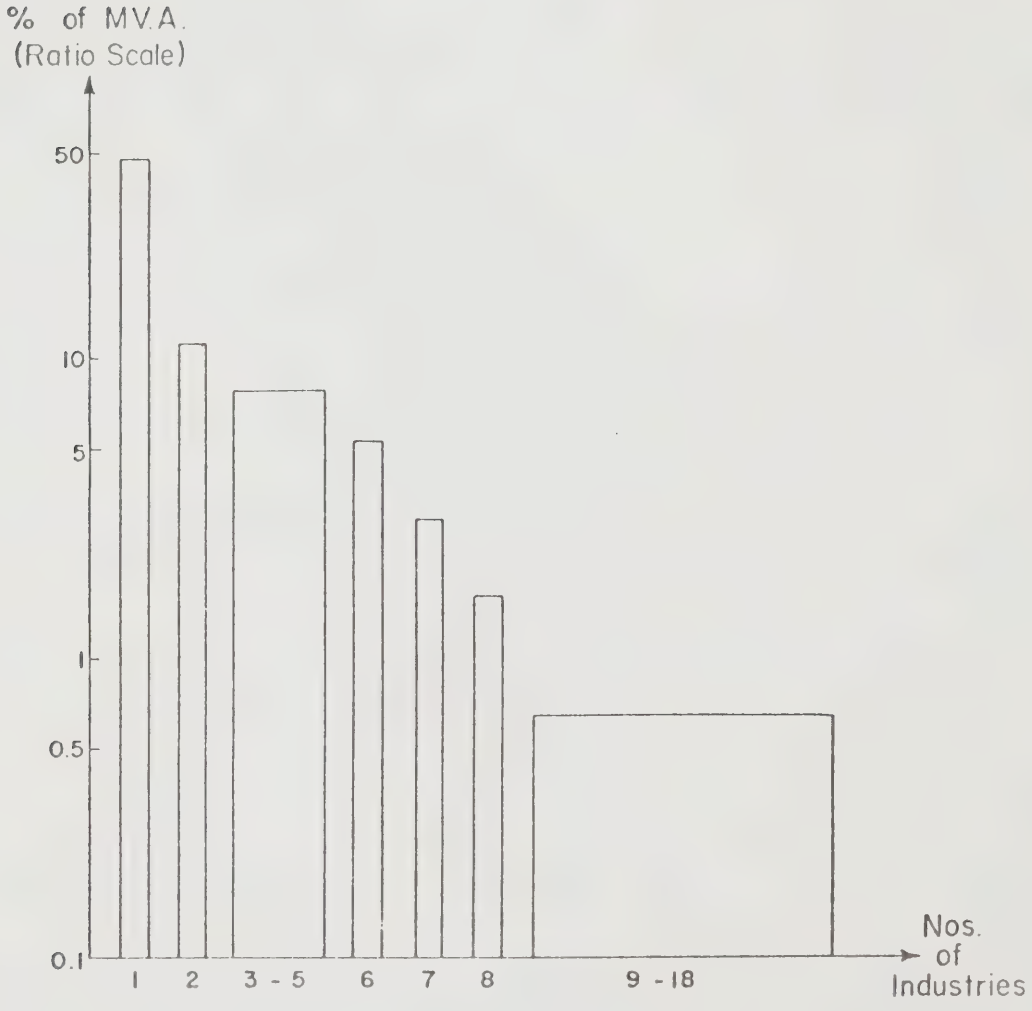
Enterprises Having Establishments in ....Industries	No. of Enterprises 1965[a]		No. of Establishments 1965		Value of Man. Shipments 1965	
	No.	Percent	No.	Percent	$M	Percent
1	29,895	98.4	30,780	92.4	16,190	47.8
2	305	1.0	996	3.0	3,786	11.2
3	79	0.3	425	1.3		
4	22	0.1	215	0.6	8,077	23.8
5	16	0.1	200	0.6		
6-10	27	0.1	449	1.3		
11-15	3	--	165	0.5	5,836	17.2
16-20	1	--	80	0.2		
over 20	-	-	-	-		
Total	30,348	100.0	33,310	100.0	33,889	100.0

Enterprises Having Establishments in ......Industries	No. of Enterprises 1970[a]		No. of Enterprises 1972[a]		No. of Establishments 1970		No. of Establishments 1972		Man. Value Added 1970		Man. Value Added 1972	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	$M	Percent	$M	Percent
1	29,256	96.9	28,913	97.0	30,004	85.3	29,709	85.2	7,911	34.4	9,462	34.8
2	602	2.0	566	1.9	1,732	4.9	1,569	4.5	3,505	15.2	2,718	10.0
3	140	0.5	140	0.5	700	2.0	746	2.1	1,929	8.4	3,155	11.6
4	67	0.2	65	0.2	477	1.4	492	1.4	1,528	6.6	2,351	8.6
5	38	0.1	41	0.1	401	1.1	394	1.1	1,129	4.9	1,385	5.1
6-10	64	0.2	69	0.2	1,117	3.2	1,154	3.3	4,459	19.4	4,908	18.0
11-15	10	--	12	--	332	0.9	443	1.3	1,327	5.8	1,850	6.8
16-20	5	--	5	--	260	0.7	264	0.8	1,190	5.2	1,364	5.0
over 20	1	--	1	--	113	0.3	112	0.3				
Total	30,183	100.0	29,812	100.0	35,136	100.0	34,883	100.0	22,978	100.0	27,193	100.0

a) Consolidated.

Sources: Canada [12, p.16]; data for 1970 and 1972 were communicated direct by the Multinational Enterprises Section, Financial Flows and Multinational Enterprises Division, Statistics Canada, Ottawa.

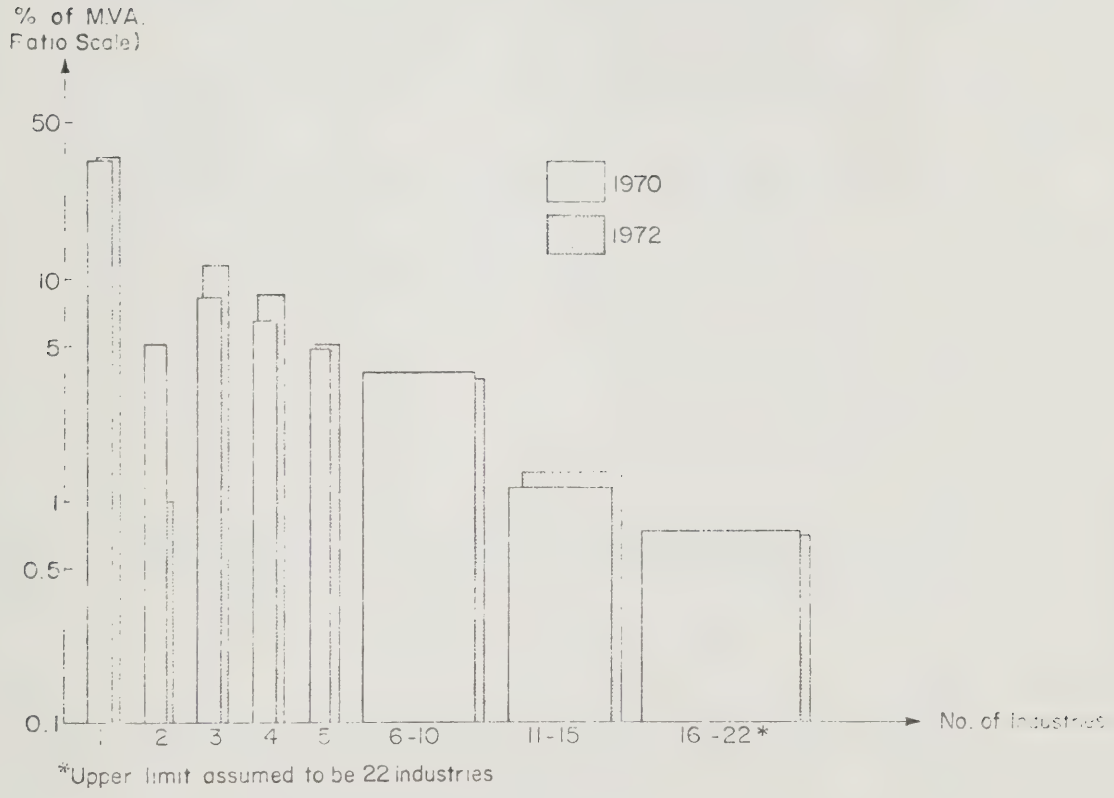
Chart 40. Share of Manufacturing Value Added (M.V.A.) Accounted for by Multi-Industry Enterprises in Canadian Manufacturing Industries, by Number of Industries in which M.I.E.'s had Operations, 1965[a]



[a] Enterprises on a consolidated basis.

Sources: Canada [12, p.16]; Exhibit 16.

Chart 41. Share of Manufacturing Value Added (M.V.A.) Accounted for by Multi-Industry Enterprises in Canadian Manufacturing, Mining, and Logging Industries, by Numbers of Industries in which M.I.E.'s had operations, 1970 and 1972[a]



[a]Enterprises on a consolidated basis.

Source: Exhibit 16.

Exhibit 17. Number and Percentage of Industries in Major Industrial Groups by Decile Percentage Brackets for Value-of-Shipment Concentration Ratios for the First Four Enterprises and Establishments in All Manufacturing Industries, 1965 and 1972[a]

Industry Group	No. of Industries	Man. Value Added % of Total	Percentage of Industries with Ratios of: 90 to 100	80 to 89	70 to 79	60 to 69	50 to 59	40 to 49	30 to 39	20 to 29	10 to 19	0 to 9	n.a.
1965 Enterprises													
Food and Beverage	19	14.5	5.3	5.3	10.5	5.3	5.3	10.5	21.0	15.8	-	-	21.0
Tobacco Products	2	1.1	100.0	-	-	-	-	-	-	-	-	-	-
Rubber	3	1.7	-	33.3	33.3	-	-	33.3	-	-	-	-	-
Leather	4	1.1	-	-	-	25.0	-	25.0	-	50.0	-	-	-
Textiles[b]	16	3.7	-	12.5	12.5	18.8	18.8	-	18.8	-	-	-	18.8
Knitting Mills	2	0.9	-	-	-	-	-	-	-	-	100.0	-	-
Clothing[c]	21	3.3	4.8	4.8	-	-	9.5	9.5	14.3	23.8	28.6	4.8	-
Wood[d]	8	4.3	-	12.5	-	-	25.0	37.5	-	-	12.5	12.5	-
Furniture and Fixture	4	1.7	-	-	-	-	-	25.0	-	25.0	25.0	25.0	-
Paper and Allied Products	7	9.0	-	-	14.3	-	14.3	42.9	14.3	14.3	-	-	-
Printing and Publishing	2	4.9	-	-	-	-	-	-	-	50.0	50.0	-	-
Primary Metals[e]	6	8.6	-	16.7	33.3	-	16.7	16.7	-	-	-	-	16.7
Metal Fabricating[f]	9	8.2	-	-	-	-	-	33.3	-	22.2	22.2	11.1	11.1
Machinery	4	4.2	-	-	50.0	-	25.0	-	-	-	25.0	-	-
Transportation Equipment	8	9.8	12.5	25.0	12.5	12.5	12.5	-	12.5	12.5	-	-	-
Electrical Products	8	6.5	-	12.5	12.5	12.5	37.5	25.0	-	-	-	-	-
Non-Metallic Mineral Products[g]	9	3.9	-	11.1	11.1	22.2	-	11.1	-	22.2	-	-	22.2
Petroleum and Coal	2	1.8	-	50.0	-	-	-	50.0	-	-	-	-	-
Chemicals[h]	10	6.6	-	-	-	30.0	-	10.0	40.0	-	-	-	20.0
Misc. Manufacturing[i]	15	3.2	-	-	13.3	26.7	13.3	13.3	-	26.7	6.7	-	-
Total Manufacturing													
Percentage	(100)	100.0	3.1	7.5	9.4	10.1	10.7	15.1	10.1	13.8	9.4	2.5	8.2
Number	159	($14,928 M)	5	12	15	16	17	24	16	22	15	4	13

Exhibit 17 continued

Industry Group	No. of Industries	Man. Value Added % of Total	Percentage of Industries with Ratios of 90 to 100	80 to 89	70 to 79	60 to 69	50 to 59	40 to 49	30 to 39	20 to 29	10 to 19	0 to 9	n.a.
1972 Enterprises													
Food and Beverage	18	14.3	11.1	-	16.7	16.7	5.5	16.7	27.8	5.5	-	-	-
Tobacco Products	2	1.0	50.0	-	-	-	-	-	-	-	-	-	50.0
Rubber	2	3.0	-	-	-	50.0	-	-	-	-	50.0	-	-
Leather	5	0.9	-	-	20.0	20.0	-	20.0	-	40.0	-	-	-
Textiles	16	3.5	12.5	-	12.5	6.2	12.5	6.2	25.0	-	-	-	25.0
Knitting Mills	3	0.9	-	-	-	-	-	-	33.3	33.3	33.3	-	-
Clothing	10	3.2	-	-	-	10.0	10.0	-	20.0	10.0	40.0	10.0	-
Wood	13	5.8	-	7.7	7.7	7.7	-	30.8	15.4	15.4	15.4	-	-
Furniture and Fixture	5	2.0	-	-	-	-	-	-	40.0	-	40.0	20.0	-
Paper and Allied Products	6	7.9	-	-	-	-	16.7	33.3	33.3	-	-	-	16.7
Printing and Publishing	4	5.1	-	-	-	-	-	25.0	-	25.0	50.0	-	-
Primary Metals	7	7.9	-	28.6	42.9	-	-	28.6	-	-	-	-	-
Metal Fabricating	11	8.1	-	-	-	9.1	-	9.1	18.2	36.4	18.2	9.1	-
Machinery	4	4.1	-	25.0	-	25.0	25.0	-	-	-	25.0	-	-
Transportation Equipment	10	10.8	-	10.0	-	10.0	-	20.0	10.0	10.0	-	-	40.0
Electrical Products	9	6.4	-	-	22.2	11.1	33.3	11.1	-	-	-	-	22.2
Non-Metallic Mineral Products	14	4.0	7.1	14.3	21.4	7.1	14.3	21.4	7.1	7.1	-	-	-
Petroleum and Coal	3	1.9	-	33.3	33.3	-	33.3	-	-	-	-	-	-
Chemicals	11	6.3	-	-	18.2	9.1	27.3	9.1	18.2	9.1	-	-	9.1
Misc. Manufacturing	18	2.6	-	-	16.7	16.7	16.7	11.1	11.1	5.5	5.5	-	16.7
Total Manufacturing Percentage	(100)	100.0	3.5	4.7	12.3	9.9	10.5	14.0	15.2	9.4	9.4	1.7	9.4
Number	171	($24,248 M)	6	8	21	17	18	24	26	16	16	3	16

Exhibit 17 continued

Industry Group	No. of Industries	Percentage of Industries with Ratios of 90 to 100	80 to 89	70 to 79	60 to 69	50 to 59	40 to 49	30 to 39	20 to 29	10 to 19	0 to 9	n.a.
1965 Establishments												
Food and Beverage	19	-	10.5	5.3	10.5	5.3	5.3	15.8	10.5	26.3	5.3	5.3
Tobacco Products	2	-	-	-	50.0	50.0	-	-	-	-	-	-
Rubber	3	-	-	33.3	-	-	-	33.3	-	-	-	33.3
Leather	4	-	-	-	-	-	25.0	25.0	25.0	25.0	-	-
Textiles[b]	16	-	6.3	18.8	6.3	18.3	-	25.0	12.5	-	-	12.5
Knitting Mills	2	-	-	-	-	-	-	-	-	100.0	-	-
Clothing[c]	21	4.8	4.8	-	-	9.5	4.8	14.3	19.0	28.6	4.8	9.5
Wood[d]	8	-	-	-	-	12.5	25.0	12.5	25.0	12.5	12.5	-
Furniture and Fixture	4	-	-	-	-	-	-	25.0	25.0	25.0	25.0	-
Paper and Allied Products	7	-	-	-	-	14.3	-	-	57.1	28.6	-	-
Printing and Publishing	2	-	-	-	-	-	-	-	-	100.0	-	-
Primary Metals[e]	6	-	-	33.3	16.7	16.7	-	33.3	-	-	-	-
Metal Fabricating[f]	9	-	-	11.1	-	-	11.1	-	44.4	22.2	11.1	-
Machinery	4	-	-	25.0	-	25.0	25.0	-	-	-	-	25.0
Transportation Equipment	8	-	12.5	12.5	12.5	12.5	12.5	-	25.0	-	-	12.5
Electrical Products	8	-	-	-	-	25.0	50.0	12.5	12.5	-	-	-
Non-Metallic Mineral Products[g]	9	-	-	11.1	-	33.3	-	22.2	11.1	11.1	-	-
Petroleum and Coal	2	-	-	-	-	-	50.0	-	50.0	-	-	-
Chemicals[h]	10	-	-	-	20.0	-	20.0	40.0	10.0	-	-	10.0
Misc. Manufacturing[i]	15	-	-	6.7	26.7	13.3	-	13.3	20.0	20.0	-	-
Total Manufacturing												
Percentage	100	0.6	3.1	7.5	7.5	11.9	9.4	15.7	18.2	16.3	3.1	6.3
Number	159	1	5	12	12	19	15	25	29	26	5	10

Exhibit 17 continued

Industry Group	No. of Industries	Percentage of Industries with Ratios of 90 to 100	80 to 89	70 to 79	60 to 69	50 to 59	40 to 49	30 to 39	20 to 29	10 to 19	0 to 9	n.a.
1972 Establishments												
Food and Beverage	18	-	-	5.5	5.5	5.5	11.1	5.5	11.1	27.8	5.5	22.2
Tobacco Products	2	-	-	-	50.0	-	-	-	-	-	-	50.0
Rubber	2	-	-	-	-	-	-	50.0	-	50.0	-	-
Leather	5	-	-	-	-	-	20.0	-	20.0	20.0	-	40.0
Textiles	16	-	-	18.7	-	-	6.2	-	6.2	-	-	68.7
Knitting Mills	3	-	-	-	-	-	-	-	33.3	66.7	-	-
Clothing	10	-	-	-	10.0	-	10.0	10.0	10.0	20.0	30.0	10.0
Wood	13	-	-	-	7.7	7.7	7.7	-	7.7	7.7	7.7	53.8
Furniture and Fixture	5	-	-	-	-	-	-	-	40.0	20.0	40.0	-
Paper and Allied Products	6	-	-	-	-	16.7	-	-	50.0	33.3	-	-
Printing and Publishing	4	-	-	-	-	-	-	-	50.0	-	25.0	25.0
Primary Metals	7	-	-	14.3	-	28.6	-	14.3	14.3	-	-	28.6
Metal Fabricating	11	-	-	-	-	-	-	-	36.4	18.2	9.1	36.4
Machinery	4	-	-	-	-	25.0	-	-	-	25.0	-	50.0
Transportation Equipment	10	-	-	10.0	10.0	10.0	10.0	10.0	-	10.0	-	40.0
Electrical Products	9	-	-	-	-	-	-	33.3	11.1	-	-	55.5
Non-Metallic Mineral Products	14	-	-	7.1	-	7.1	7.1	21.4	14.3	14.3	-	28.6
Petroleum and Coal	3	-	-	33.3	-	-	-	-	33.3	-	-	33.3
Chemicals	11	-	-	-	-	9.1	9.1	-	18.2	18.2	-	45.4
Misc. Manufacturing	18	-	-	-	5.5	5.5	11.1	-	-	16.7	-	61.1
Total Manufacturing												
Percentage	(100)	-	-	4.7	3.5	5.8	6.4	6.4	14.6	15.2	5.3	38.0
Number	171	-	-	8	6	10	11	11	25	26	9	65

a) Enterprises on an unconsolidated basis.
b) Excluding 1 industry.
c) Excluding 1 industry.
d) Excluding 2 industries.
e) Excluding 1 industry.
f) Excluding 2 industries.
g) Excluding 4 industries.
h) Excluding 1 industry.
i) Excluding 13 industries (vid. Canada [12, p.260] for details of exclusions).

Sources: Canada [12, Table A-1, pp.56-71, and Table A-3, pp.89-98]; Statistics Canada [58].

manufacturing industries by decile percentage brackets for 1965 reveals the highest percentage of reported industries[49] to be in the 40-49% bracket with the 20-29% bracket in second place (*vid.* Chart 42). Highly concentrated industries[50] are mainly found in the following industry groups: Tobacco Products, Rubber Industries, Textiles, Primary Metals, Transportation Equipment, Petroleum and Coal, and Misc. Manufacturing Industries. Low concentration[51] has its domain in Knitting Mills, Clothing, Printing and Publishing, and Metal Fabricating. As can be seen from Exhibit 18 and Chart 43, 33% of all manufacturing industries could be classified as highly concentrated industries, whereas 39% and 28% fell in the categories of medium and low concentration, respectively; a more detailed breakdown by percentage deciles is provided in Exhibit 19 and Chart 44.

Although concentration ratios have the definite advantage of providing an intuitive link to the concept of fewness in industries and pointing to a kind of 'oligopoly nucleus', a more precise assessment of concentration levels is made possible with a summary measure such as the H-Index.[52] On the other hand, the perspective view of concentration levels is somewhat lost if the magnitudes in Exhibits 21 and 22 are compared with the aforementioned corresponding figures for the top-4 ratios. From Exhibit 21, a perfect and rapid decline from low to high concentration levels can be observed (*vid.* Chart 45). Even when taking the--necessarily

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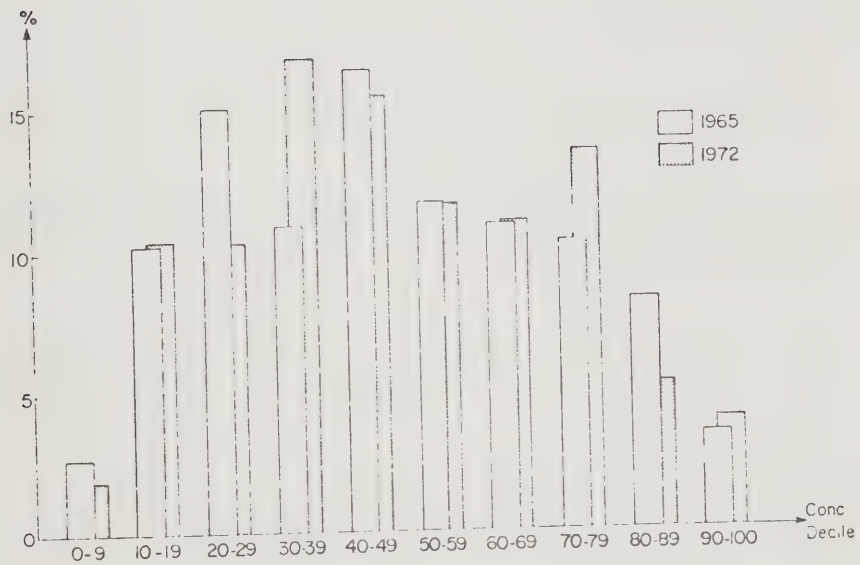
[49] For 1965 (1972), top-4 ratios were not reported in 13 (18) of the 159 (171) covered industries (*vid. supra*).

[50] Top-4 ratio of 60% and more.

[51] Top-4 ratio of less than 30%.

[52] H-Indexes are tabulated in terms of manufacturing value added, value of manufacturing shipments, and employment. For economy reasons, the value-added measure was selected as reference. Although the differences between H-Indexes based on the three measures are insignificant, a clear tendency could be observed, as is tabulated in Exhibit 20: for all manufacturing industries, value-added concentration showed significantly higher levels than value-of-shipment concentration and the latter, in turn, was higher than employment concentration.

Chart 42. Percentage of All Manufacturing Industries by Decile Percentage Brackets for Value-of-Shipment Concentration Ratios for the First Four Enterprises, 1965 and 1972



Source: Exhibit 17.

Exhibit 18. Classification of Value-of-Shipment Concentration Levels for the First Four Enterprises and Establishments in All Manufacturing Industries, 1965 and 1972

	High Concentration		Medium Concentration		Low Concentration	
	No. of Industries	Percent	No. of Industries	Percent	No. of Industries	Percent
Enterprises 1965	48	32.9	57	39.0	41	28.1
Enterprises 1972	52	33.5	68	43.9	35	22.6
Establishments 1965	30	20.1	59	35.6	60	40.3
Establishments 1972[a]	14	13.2	32	30.2	60	56.6

a) Comparability of the figures is seriously impeded by the high percentage of undisclosed concentration ratios.

Source: Exhibit 17.

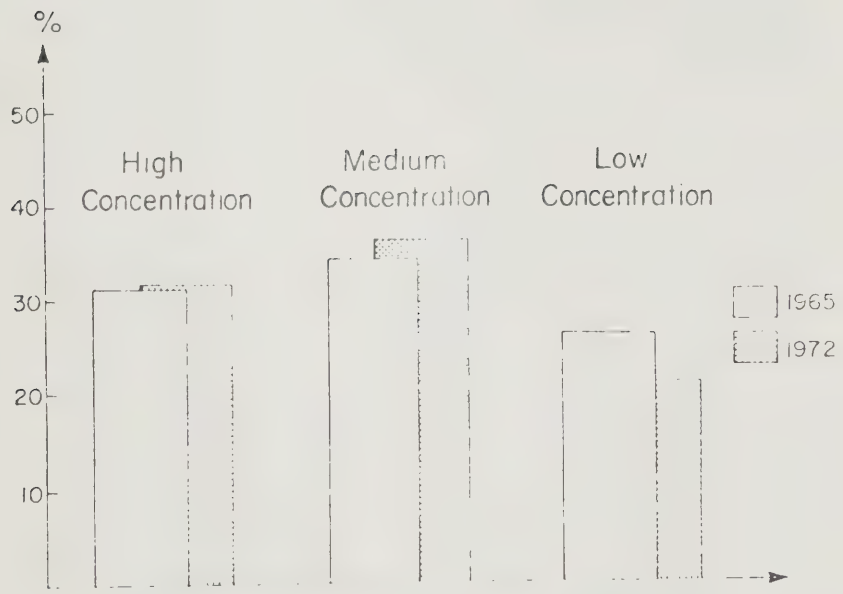
Exhibit 19. Percent of Manufacturing Industries by Value-of-Shipment Concentration Brackets for the First Four Enterprises, 1965 and 1972[a,b]

Concentration Bracket	Cumulative Percent of Industries	
	1965	1972
90% or more	3.4	3.9
80% or more	11.6	9.1
70% or more	21.9	22.6
60% or more	32.9	33.6
50% or more	44.5	45.2
40% or more	60.9	60.7
30% or more	71.9	77.5
20% or more	87.0	87.8
10% or more	97.3	98.1
0% or more	100.0	100.0
Total No. of Industries	146	155

a) Excluding industries for which no concentration ratios were published.
b) Enterprises on an unconsolidated basis.

Source: Exhibit 17.

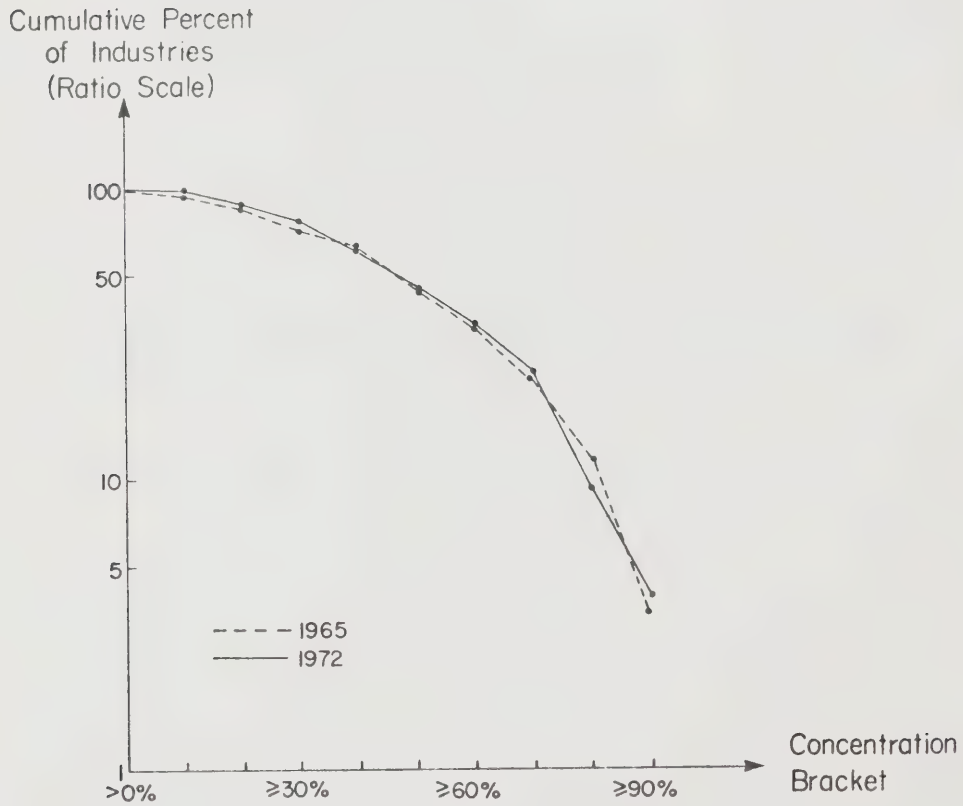
Chart 43. Classification of Value-of-Shipment Concentration Levels for the First Four Enterprises in All Manufacturing Industries, 1965 and 1972[a]



[a] Enterprises on an unconsolidated basis.

Source: Exhibit 18.

Chart 44. Percent of Manufacturing Industries by Value-of-Shipment Concentration Brackets for the First Four Enterprises, 1965 and 1972[a]



[a] Enterprises on an unconsolidated basis.

Source: Exhibit 19.

Exhibit 20. Ranking of the Magnitudes of Hirschman-Herfindahl Indexes for Three Measures of Business Activity, All Manufacturing Industries, 1965 and 1972

Measure of Business Activity	Rank[a] 1		2		3		
1965	No. of Industries	Percent	No. of Industries	Percent	No. of Industries	Percent	Total
Value added	94	62	28	18	30	20	152
Value of shipments	39	26	64	42	49	32	152
Employment	19	12	59	39	74	49	152
1972							
Value added	87	51	56	33	28	16	171
Value of shipments	55	32	81	47	35	20	171
Employment	30	17	35	20	106	62	171

a) In descending order, i.e. highest value getting rank "1", etc.

Sources: Canada [12, Table A-1]; Statistics Canada [58].

Exhibit 21. Number and Percentage of Industries in Major Industrial Groups by Specified Ranges of Hirschman-Herfindahl Indexes, by Manufacturing Value Added, Enterprises and Establishments in All Manufacturing Industries, 1965 and 1972

Industry Group	No. of Industries	Percentage of Industries with Hirschman-Herfindahl Indexes of										
		0.50 and more	0.45 to 0.50	0.40 to 0.45	0.35 to 0.40	0.30 to 0.35	0.25 to 0.30	0.20 to 0.25	0.15 to 0.20	0.10 to 0.15	0.05 to 0.10	0 to 0.05
1965 Enterprises[a,b]												
Food and Beverage	19	-	-	-	5.3	5.3	15.8	10.5	10.5	5.3	26.3	21.0
Tobacco Products	2	-	-	-	-	50.0	-	50.0	-	-	-	-
Rubber	3	-	-	-	-	-	-	33.3	33.3	-	33.3	-
Leather	4	-	-	-	-	-	-	-	25.0	-	25.0	50.0
Textiles	16	-	6.2	-	6.2	6.2	12.5	6.2	18.7	18.7	6.2	18.7
Knitting Mills	2	-	-	-	-	-	-	-	-	-	-	100.0
Clothing[c]	15	-	-	-	6.7	-	-	6.7	-	-	13.3	73.3
Wood	8	-	-	-	-	12.5	-	-	-	37.5	25.0	25.0
Furniture and Fixture	4	-	-	-	-	-	-	-	-	-	25.0	75.0
Paper and Allied Products	7	-	-	-	-	-	-	-	14.3	14.3	57.1	14.3
Printing and Publishing	2	-	-	-	-	-	-	-	-	-	-	100.0
Primary Metals	6	-	-	-	-	16.7	-	33.3	33.3	-	16.7	-
Metal Fabricating	9	-	11.1	-	-	-	-	-	-	22.2	11.1	55.5
Machinery	4	-	-	-	-	-	25.0	-	-	25.0	25.0	25.0
Transportation Equipment	8	-	-	-	12.5	12.5	-	12.5	12.5	12.5	12.5	25.0
Electrical Products	8	-	-	-	-	-	-	12.5	37.5	25.0	25.0	-
Non-Metallic Mineral Prod.	9	-	-	-	11.1	-	22.2	22.2	11.1	-	11.1	22.2
Petroleum and Coal	2	-	-	-	-	-	-	50.0	-	-	50.0	-
Chemicals	10	10.0	-	-	-	-	-	-	20.0	20.0	40.0	10.0
Misc. Manufacturing	15	-	-	-	-	-	-	26.7	13.3	20.0	6.7	33.3
Total Manufacturing												
Percent	100	0.6	1.3	-	3.3	3.9	5.2	11.1	12.4	12.4	19.6	30.1
Number	153	1	2	-	5	6	8	17	19	19	30	46

Exhibit 21 continued

Industry Group	No. of Industries	0.50 and more	0.45 to 0.50	0.40 to 0.45	0.35 to 0.40	0.30 to 0.35	0.25 to 0.30	0.20 to 0.25	0.15 to 0.20	0.10 to 0.15	0.05 to 0.10	0 to 0.05
1972 Enterprises[a]												
Food and Beverage	18	-	-	-	-	5.5	-	11.1	22.2	11.1	38.9	11.1
Tobacco Products	2	-	-	-	-	-	100.0	-	-	-	-	-
Rubber	2	-	-	-	-	-	-	-	-	50.0	-	50.0
Leather	5	-	-	-	-	-	-	-	20.0	20.0	20.0	40.0
Textiles	16	6.2	-	-	6.2	6.2	-	12.5	12.5	6.2	43.7	6.2
Knitting Mills	3	-	-	-	-	-	-	-	-	-	-	100.0
Clothing	10	-	-	-	-	-	-	-	10.0	10.0	20.0	60.0
Wood	13	-	-	-	-	7.7	7.7	-	-	7.7	46.1	30.8
Furniture and Fixture	5	-	-	-	-	-	-	-	-	-	20.0	80.0
Paper and Allied Products	6	-	-	-	-	-	16.7	-	-	-	66.7	16.7
Printing and Publishing	4	-	-	-	-	-	-	-	-	-	25.0	75.0
Primary Metals	7	-	-	-	-	-	14.3	28.6	14.3	14.3	28.6	-
Metal Fabricating	11	-	-	-	-	-	-	-	-	9.1	18.2	72.7
Machinery	4	-	-	-	-	-	25.0	-	-	25.0	25.0	25.0
Transportation Equipment	10	-	10.0	-	-	10.0	-	-	10.0	30.0	20.0	20.0
Electrical Products	9	-	-	-	-	-	-	-	33.3	44.4	22.2	-
Non-Metallic Mineral Prod.	14	-	-	-	-	7.1	7.1	21.4	14.3	14.3	28.6	7.1
Petroleum and Coal	3	-	33.3	-	-	-	-	-	33.3	-	33.3	-
Chemicals	11	-	-	-	-	-	-	-	18.2	36.4	36.4	9.1
Misc. Manufacturing	18	-	-	-	-	-	-	11.1	27.8	16.7	16.7	27.8
Total Manufacturing												
Percent	100	0.6	1.2	-	0.6	2.9	4.1	6.4	13.4	15.2	29.2	26.3
Number	171	1	2	-	1	5	7	11	23	26	50	45

Exhibit 21 continued

Industry Group	No. of Industries	Percentage of Industries with Hirschman-Herfindahl Indexes of 0.35 to 0.40	0.30 to 0.35	0.25 to 0.30	0.20 to 0.25	0.15 to 0.20	0.10 to 0.15	0.05 to 0.10	0 to 0.05
1965 Establishments[b]									
Food and Beverage	19	5.3	-	-	10.5	10.5	5.3	21.0	47.4
Tobacco Products	2	-	-	-	50.0	-	50.0	-	-
Rubber	3	-	-	-	-	66.7	-	33.3	-
Leather	4	-	-	-	-	-	-	50.0	50.0
Textiles	16	6.2	-	12.5	6.2	12.5	18.7	25.0	18.7
Knitting Mills	2	-	-	-	-	-	-	-	100.0
Clothing[c]	15	6.7	-	-	6.7	-	-	13.3	73.3
Wood	8	-	-	-	-	-	37.5	25.0	37.5
Furniture and Fixture	4	-	-	-	-	-	-	25.0	75.0
Paper and Allied Products	7	-	-	-	-	-	14.3	-	85.7
Printing and Publishing	2	-	-	-	-	-	-	-	100.0
Primary Metals	6	-	-	-	16.7	33.3	16.7	16.7	16.7
Metal Fabricating	9	-	-	-	-	11.1	11.1	-	77.8
Machinery	4	-	-	25.0	-	-	-	50.0	25.0
Transportation Equipment	8	12.5	12.5	-	-	12.5	12.5	25.0	25.0
Electrical Products	8	-	-	-	-	12.5	12.5	62.5	12.5
Non-Metallic Mineral Prod.	9	-	-	-	11.1	-	44.4	11.1	33.3
Petroleum and Coal	2	-	-	-	-	-	-	50.0	50.0
Chemicals	10	-	-	-	-	20.0	10.0	40.0	30.0
Misc. Manufacturing	15	-	-	-	13.3	13.3	20.0	13.3	40.0
Total Manufacturing									
Percent	100	2.6	0.6	2.0	5.9	9.8	13.7	22.2	43.1
Number	153	4	1	3	9	15	21	34	66

Exhibit 21 continued

Industry Group	No. of Industries	Percentage of Industries with Hirschman-Herfindahl Indexes of 0.40 to 0.45	0.35 to 0.40	0.30 to 0.35	0.25 to 0.30	0.20 to 0.25	0.15 to 0.20	0.10 to 0.15	0.05 to 0.10	0 to 0.05
1972 Establishments[d]										
Food and Beverage	18	-	-	-	-	-	11.1	16.7	22.2	50.0
Tobacco Products	2	-	-	-	-	50.0	-	50.0	-	-
Rubber	2	-	-	-	-	-	-	-	50.0	50.0
Leather	5	-	-	-	-	-	-	-	40.0	60.0
Textiles	16	-	-	-	6.2	12.5	12.5	6.2	37.5	25.0
Knitting Mills	3	-	-	-	-	-	-	-	-	100.0
Clothing	10	-	-	-	-	-	-	10.0	30.0	60.0
Wood	13	-	-	-	-	7.7	-	15.4	23.1	53.8
Furniture and Fixture	5	-	-	-	-	-	-	-	-	100.0
Paper and Allied Products	6	-	-	-	-	-	-	16.7	-	83.3
Printing and Publishing	4	-	-	-	-	-	-	-	-	100.0
Primary Metals	7	-	-	-	-	14.3	-	42.8	28.6	14.3
Metal Fabricating	11	-	-	-	-	-	-	9.1	-	90.9
Machinery	4	-	-	-	-	-	25.0	-	50.0	25.0
Transportation Equipment	10	-	-	10.0	10.0	-	10.0	20.0	20.0	30.0
Electrical Products	9	-	-	-	-	-	-	22.2	44.4	33.3
Non-Metallic Mineral Prod.	14	-	-	-	-	7.1	-	21.4	35.7	35.7
Petroleum and Coal	3	33.3	-	-	-	-	-	-	33.3	33.3
Chemicals	11	-	-	-	-	-	9.1	18.2	27.3	45.4
Misc. Manufacturing	18	-	-	-	-	-	27.8	22.2	16.7	33.3
Total Manufacturing										
Percent	100	0.6	-	0.6	1.2	3.5	7.0	15.2	24.0	47.9
Number	171	1	-	1	2	6	12	26	41	82

a) Enterprises on an unconsolidated basis.
b) Vid. Exhibit 17 for excluded industries.
c) Not available for seven 5-digit industries but for the corresponding 4-digit industry.
d) Hirschman-Herfindahl Index in terms of total value added.

Sources: Canada [12, Tables A-1 and A-3]; data for 1972 were supplied by the Manufacturing and Primary Industries Division, Statistics Canada.

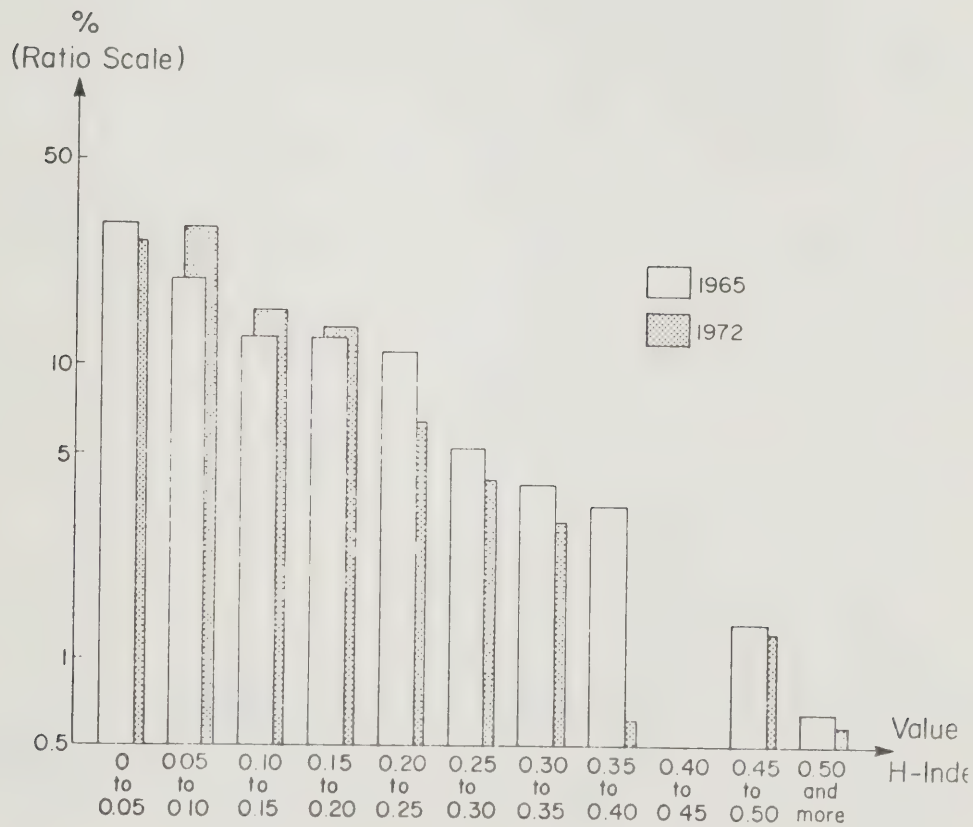
Exhibit 22. Classification of Concentration Levels as Measured by Hirschman-Herfindahl Indexes in Terms of Manufacturing Value Added on the Enterprise and on the Establishment Level in All Manufacturing Industries, 1965 and 1972

	High Concentration		Medium Concentration		Low Concentration	
	No. of Industries	Per-cent	No. of Industries	Per-cent	No. of Industries	Per-cent
Enterprises 1965	22	14.4	55	35.9	76	49.7
Enterprises 1972	16	9.4	60	35.1	95	55.5
Establishments 1965	8	5.2	45	29.4	100	65.3
Establishments 1972[a]	4	2.3	46	26.6	123	71.1

a) Hirschman-Herfindahl index in terms of total value added.

Source: Exhibit 21.

Chart 45. Percentage of all Manufacturing Industries by Specified Ranges of Hirschman-Herfindahl Indexes for Enterprises, by Manufacturing Value Added, 1965 and 1972



Source: Exhibit 21.

arbitrary--limits of categorization of concentration levels into account,[53] it is interesting to note the overall reduction of concentration levels in Exhibit 22 and Chart 46, *viz.* 14% of all manufacturing industries in the high concentration bracket, and 36% and 50% in the medium and low concentration brackets, respectively. A more detailed breakdown of industries in terms of concentration brackets in steps of 0.05 points is provided in Exhibit 23 and Chart 47. Although it is not difficult to detect the aforementioned industry groups of low concentration, this procedure is more difficult with the other end of the spectrum. Thus, a list of the 20 individual industries showing the highest concentration levels has been compiled in Exhibit 24 in terms of the top-4 ratios and in Exhibit 25 in terms of the H-Index. As was to be expected, a cross-comparison of the two lists shows an almost perfect concordance, *i.e.* highly concentrated industries in terms of the H-Index are also on top of the four-firm-ratio list.[54] It is interesting to note that 17 out of the 20 industries in Exhibit 25 and 16 out of the 20 industries in Exhibit 24 have less than 20 enterprises each. It is not surprising to find so many 'few-firm markets' among the most highly concentrated industries since it is--algebraically--relatively easy to achieve a substantial market share in these markets which, then, results in a high level of concentration.[55]

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[53] Concentration categories in terms of the H-Index are suggested as follows:

High Concentration: 0.25 and over

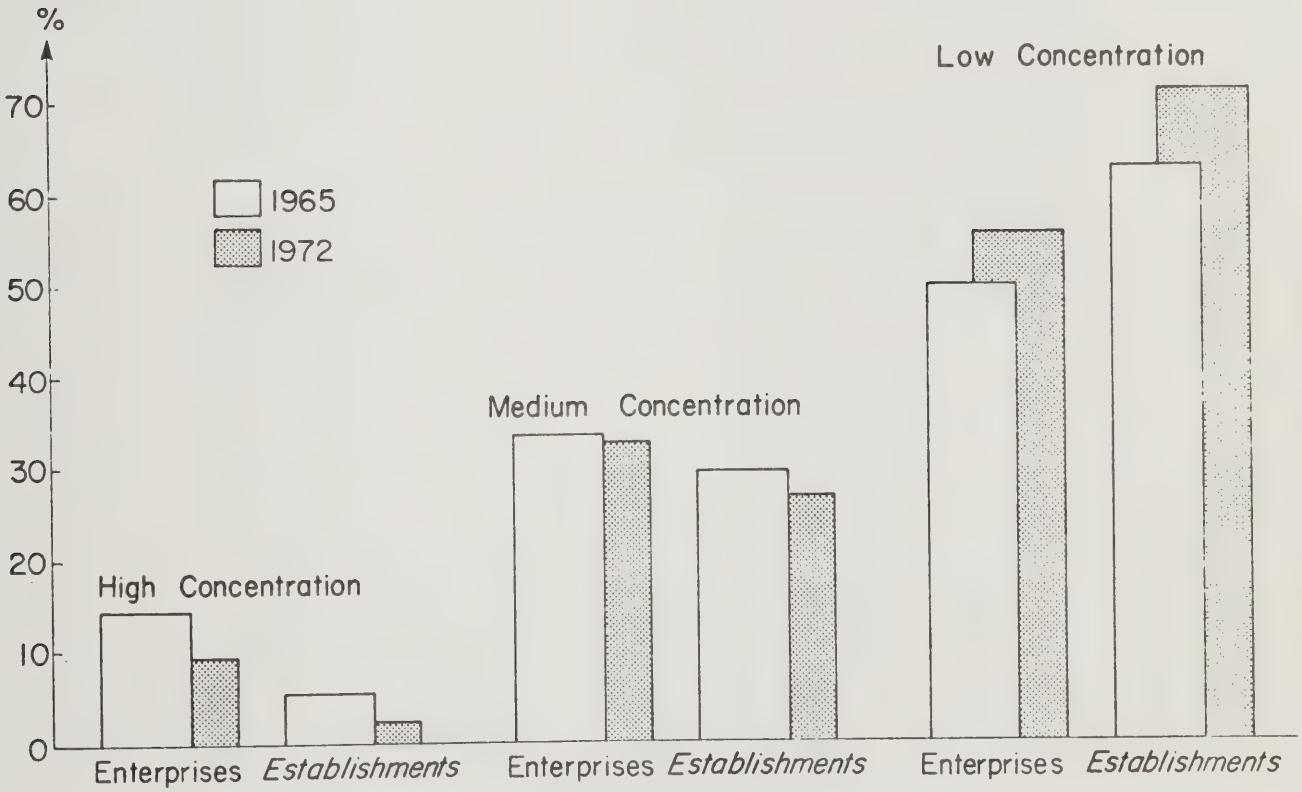
Medium Concentration: 0.10-0.25

Low Concentration: under 0.10

[54] Actually, only seven industries appear on both lists (SIC 1450, 3250, 2470-2, 1530, 2591, 3290, and 2190) because an additional 10 industries from the H-Index list that would most certainly have made the four-firm list are affected by confidentiality rules, *i.e.* no publication of top-4 ratios (SIC 3710, 3040-1, 1830, 2010-1, 1250, 3561, 2970, 3550, 1391, and 1330).

[55] Even if the six firms in the industry "Explosives and Ammunition Mfrs." were of equal size, which is minimum concentration with a given number of firms, the H-Index would be 0.167, a medium level of concentration, and the top-4 ratio would be 0.668, a high level of concentration.

Chart 46. Classification of Concentration Levels as Measured by Hirschman-Herfindahl Indexes in Terms of Manufacturing Value Added on the Enterprise and on the Establishment Level in All Manufacturing Industries, 1965 and 1972[a]



[a] Enterprises on an unconsolidated basis; establishments in terms of total value added in 1972.

Source: Exhibit 22.

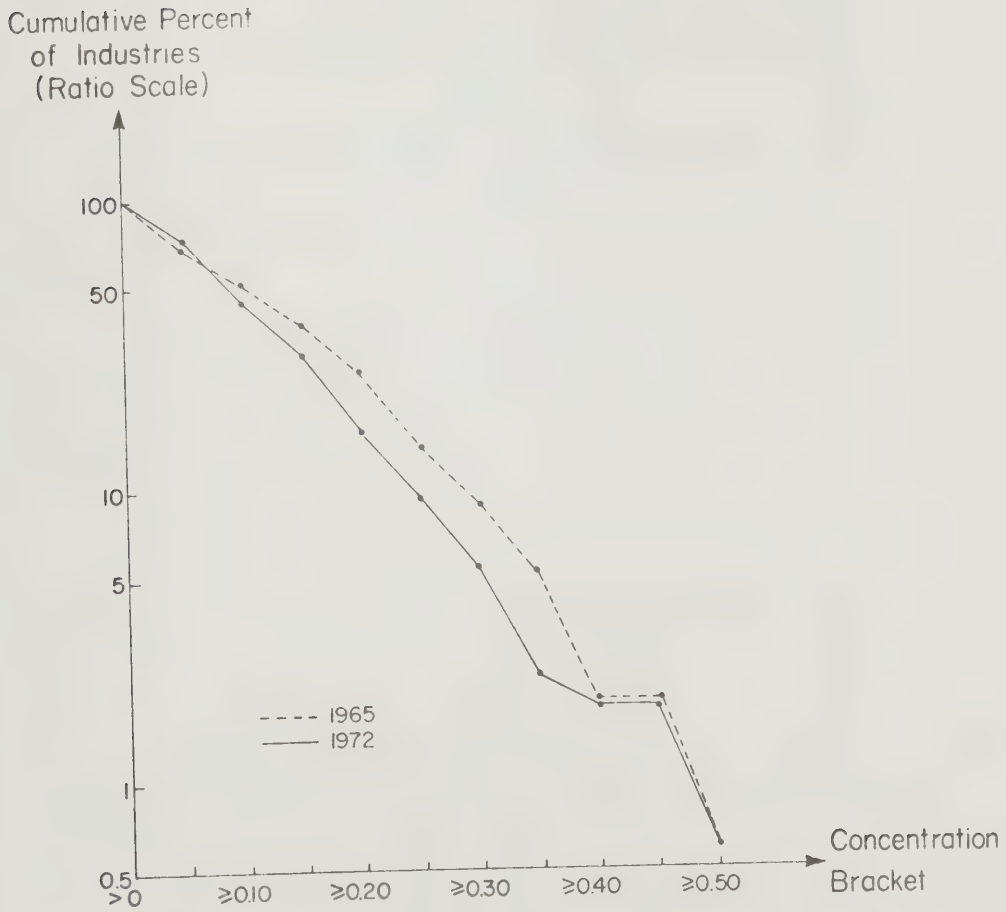
Exhibit 23. Percent of Manufacturing Industries by Specified Ranges of Hirschman-Herfindahl Indexes on the Enterprise Level, by Manufacturing Value Added, 1965 and 1972[a]

Concentration Bracket	Cumulative Percent of Industries	
	1965	1972
0.50 or more	0.6	0.6
0.45 or more	1.9	1.8
0.40 or more	1.9	1.8
0.35 or more	5.2	2.4
0.30 or more	9.1	5.3
0.25 or more	14.3	9.4
0.20 or more	25.4	15.8
0.15 or more	37.8	29.2
0.10 or more	50.2	44.4
0.05 or more	69.8	73.6
0 or more	100.0	100.0
Total No. of Industries	153	171

a) Enterprises on an unconsolidated basis.

Source: Exhibit 21.

Chart 47. Percent of Manufacturing Industries by Specified Ranges of Hirschman-Herfindahl Indexes on the Enterprise Level, by Manufacturing Value Added, 1965 and 1972[a]



[a] Enterprises on an unconsolidated basis.

Source: Exhibit 23.

Exhibit 24. Twenty Manufacturing Industries with the Highest Value-of-Shipment Concentration Ratios for the First Four Firms (CR_4), by Enterprises, 1965 and 1972, and by Establishments, 1965[a]

1965 Enterprises[b]

Rank	SIC Code	Industry *	No. of Enterprises	CR_4
1	1450	Breweries	11	94.5
2	3230	Motor Vehicle Mfrs.	19	93.4
3	2470-2	Men's Hats	7	93.0
4	1510	Leaf Tobacco Processors	13	92.3
5	3652	Mfrs. of Lubricating Oils and Greases	14	92.3
6	1530	Tobacco Products Mfrs.	12	91.4
7	2591	Wood Preservation	20	89.4
8	2960	Aluminium Rolling, Casting and Extruding	42	88.1
9	1630	Rubber Tire & Tube Mfrs.	7	87.3
10	3260	Railroad Rolling Stock Ind.	11	86.4
11	3290	Misc. Vehicle Mfrs.	19	85.0
12	1430	Distilleries	13	84.2
13	2190	Linoleum & Coated Fabrics Ind.	12	84.2
14	3370	Battery Mfrs.	13	83.6
15	3570	Abrasives Mfrs.	18	82.4
16	2150	Pressed & Punched Felt Mills	12	81.3
17	2470-4	Hat & Cap Makers' Materials	8	81.2
18	2950	Smelting and Refining	13	80.6
19	3650	Petroleum Refining	25	80.0
20	1240	Flour Mills	36	79.6

1972 Enterprises[b]

1	1810	Cotton Yarn and Cloth Mills	9	97.5
2	1530	Tobacco Products Mfrs. (6)	11	97.1
3	3561	Glass Mfrs.	9	97.0
4	1093	Breweries (1)	7	96.5
5	1831	Fibre and Filament Yarn Mfrs.	7	93.8
6	1082	Cane and Beet Sugar Processors	7	93.7
7	2960	Aluminum Rolling, Casting and Extruding (8)	55	89.0
8	2591	Wood Preservation Ind. (7)	19	87.1
9	3290	Misc. Vehicle Mfrs. (11)	35	86.6
10	3570	Abrasives Mfrs. (15)	17	86.2
11	3652	Mfrs. of Lubricating Oils and Greases (5)	14	85.9
12	3520	Cement Mfrs.	8	83.7
13	3180	Office and Store Machinery Mfrs.	30	82.7

continued...

Exhibit 24 continued

1972 Enterprises[b]

Rank	SIC Code	Industry*	No. of Enterprises	CR_4
14	2970	Copper and Copper Alloy Rolling, Casting & Extruding	45	81.9
15	1092	Distilleries (12)	14	79.7
16	3391	Battery Mfrs. (14)	16	79.3
17	3380	Mfrs. of Electrical Wire and Cable	17	79.2
18	3912	Clock and Watch Mfrs.	18	79.0
19	2950	Smelting and Refining	14	78.6
20	3997	Typewriter Supplies Mfrs.	11	78.3

1965 Establishments

1	2470-2	Men's Hats	7	93.0
2	1250	Breakfast Cereal Mfrs.	17	89.7
3	3290	Misc. Vehicle Mfrs.	19	85.0
4	1350	Vegetable Oil Mills	12	82.0
5	2150	Pressed & Punched Felt Mills	12	81.3
6	2470-4	Hat & Cap Makers' Materials	8	81.2
7	1610	Rubber Footwear Mfrs.	7	79.0
8	1391	Macaroni Mfrs.	19	78.0
9	3180	Office & Store Machinery Mfrs.	23	78.0
10	3550	Asbestos Products Mfrs.	17	77.9
11	3260	Railroad Rolling Stock Ind.	13	76.2
12	3040-1	Mfrs. of Metal Food Cans	11	76.1
13	2970	Copper & Alloy Rolling, Casting & Extruding	56	75.2
14	2130	Cordage & Twine Ind.	18	74.8
15	2120	Thread Mills	13	74.3
16	3988	Typewriter Supplies Mfrs.	11	73.8
17	2910	Iron & Steel Mills	41	73.0
18	2190	Linoleum & Coated Fabrics Ind.	14	73.0
19	2291	Auto Fabric Accessories Mfrs.	30	69.9
20	3812	Clock and Watch Mfrs.	20	68.8

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* 1965 rank in parentheses where applicable.
a) 1972 Establishments omitted because of insufficient coverage.
b) Enterprises on an unconsolidated basis.

Sources: vid. Exhibit 17; Statistics Canada [56, Table 2].

Exhibit 25. Twenty Manufacturing Industries with the Highest Hirschman-Herfindahl Indexes (C) in Terms of Manufacturing Value Added, by Enterprises and Establishments, 1965 and 1972

1965 Enterprises[a]

Rank	SIC Code	Industry*	No. of Enterprises	C
1	3710	Explosives & Ammunition Mfrs.	6	0.6257
2	3040-1	Mfrs. of Metal Food Cans	5	0.4722
3	1830	Cotton Yarn & Cloth Mills	16	0.4573
4	2010-1	Mfrs. of Filament,Staple Fibre and Tow	6	0.3814
5	1250	Breakfast Cereal Mfrs.	15	0.3764
6	2470-2	Men's Hats	7	0.3736
7	3290	Misc. Vehicle Mfrs.	19	0.3778
8	3561	Glass Mfrs.	8	0.3595
9	3230	Motor Vehicle Mfrs.	19	0.3443
10	3652	Mfrs. of Lubricating Oils and Greases	14	0.3435
11	2970	Copper & Alloy Rolling, Casting & Extruding	42	0.3251
12	1450	Breweries	11	0.3205
13	3520	Refractories Mfrs.	18	0.3184
14	2190	Linoleum & Coated Fabrics Ind.	12	0.3173
15	1530	Tobacco Products Mfrs.	12	0.3081
16	2591	Wood Preservation	20	0.3025
17	2960	Aluminum Rolling, Casting and Extruding	43	0.2955
18	3550	Asbestos Products Mfrs.	15	0.2953
19	1391	Macaroni Mfrs.	17	0.2952
20	2120	Thread Mills	13	0.2929

1972 Enterprises[a]

1	1810	Cotton Yarn & Cloth Mills (3)	9	0.5500
2	3652	Mfrs. of Lubricating Oils and Greases (10)	14	0.4873
3	3290	Misc. Vehicle Mfrs. (7)	35	0.4593
4	1891	Thread Mills (20)	16	0.3515
5	3561	Glass Mfrs. (8)	9	0.3369
6	1831	Fibre & Filament Yarn Mfrs.(4)	7	0.3307
7	2593	Mfrs. of Particle Board	10	0.3122
8	1093	Breweries (12)	7	0.3021
9	3230	Motor Vehicle Mfrs. (9)	17	0.3012
10	2591	Wood Preservation Ind. (16)	19	0.2985
11	3180	Office and Store Machinery Mfrs.	30	0.2958
12	1510	Leaf Tobacco Mfrs.	6	0.2945
13	1530	Tobacco Products Mfrs.(15)	11	0.2872
14	2960	Aluminum Rolling, Casting and Extruding(17)	55	0.2765

Exhibit 25 continued

1972 Enterprises[a]

Rank	SIC Code	Industry*	No. of Enterprises	C
15	3570	Abrasives Mfrs.	17	0.2621
16	2720	Asphalt Roofing Mfrs.	5	0.2508
17	3914	Ophthalmic Goods Mfrs.	49	0.2483
18	3591	Refractories Mfrs. (13)	15	0.2463
19	3520	Cement Mfrs.	8	0.2452
20	3580	Lime Mfrs.	10	0.2386

1965 Establishments

1	2010-1	Mfrs. of Filament, Staple Fibre and Tow	7	0.3806
2	3290	Misc. Vehicle Mfrs.	19	0.3778
3	2470-2	Men's Hats	7	0.3736
4	1250	Breakfast Cereal Mfrs.	17	0.3698
5	3230	Motor Vehicle Mfrs.	20	0.3217
6	2120	Thread Mills	13	0.2929
7	2291	Auto Fabric Accessory Mfrs.	30	0.2523
8	3180	Office & Store Machinery Mfrs.	23	0.2500
9	1391	Macaroni Mfrs.	19	0.2350
10	2960	Aluminum Rolling, Casting and Extruding	50	0.2335
11	1510	Leaf Tobacco Processors	18	0.2141
12	1350	Vegetable Oil Mills	12	0.2124
13	3812	Clock and Watch Mfrs.	20	0.2070
14	3550	Asbestos Products Mfrs.	17	0.2063
15	3520	Refractories Mfrs.	19	0.2058[b]
16	2150	Pressed & Punched Felt Mills	12	0.2045
17	2470-4	Hat & Cap Makers' Materials	8	0.2025
18	3988	Typewriter Supplies Mfrs.	11	0.2022
19	2130	Cordage & Twine Ind.	18	0.1942
20	2910	Iron & Steel Mills	41	0.1927

1972 Establishments[c]

1	3652	Mfrs. of Lubricating Oils and Greases	18	0.415
2	3290	Misc. Vehicle Mfrs. (2)	37	0.313
3	1891	Thread Mills (6)	17	0.284
4	3230	Motor Vehicle Mfrs. (5)	22	0.267
5	1831	Fibre and Filament Yarn Mfrs.(1)	12	0.233
6	1880	Automobile Fabric Accessories Ind. (7)	24	0.230
7	2593	Mfrs. of Particle Board	11	0.215
8	3591	Refractories Mfrs.(15)	17	0.213
9	1510	Leaf Tobacco Processors (11)	10	0.212

Exhibit 25 continued

1972 Establishments[c]

Rank	SIC Code	Industry*	No. of Enterprises	C
10	2910	Iron & Steel Mills (20)	48	0.202
11	3912	Clock and Watch Mfrs. (13)	18	0.182
12	3997	Typewriter Supplies Mfrs.(18)	12	0.178
13	3760	Mfrs. of Soap and Cleaning Compounds	117	0.174
14	3994	Sound Recording and Musical Instruments Mfrs.	33	0.170
15	3180	Office and Store Machinery Mfrs. (8)	32	0.169
16	1852	Pressed and Punched Felt Mills(16)	12	0.168
17	1083	Vegetable Oil Mills (12)	10	0.163
18	1840	Cordage and Twine Ind. (19)	20	0.162
19	3911	Instrument and Related Products Mfrs.	138	0.155
20	1032	Frozen Fruit and Vegetable Processors	32	0.155

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* 1965 rank in parentheses, where applicable.
a) Enterprises on an unconsolidated bases.
b) Estimate from weighted Niehans index.
c) Hirschman-Herfindahl indexes in terms of total value added.

Sources: vid. Exhibit 21; Statistics Canada [56, Table 6].

Furthermore, the majority of the highly concentrated industries in Exhibits 24 and 25 are of minor importance except for four industries that accounted for more than 1% each in total manufacturing value added in 1965; they are "Motor Vehicle Mfrs." (MVA: $631 M or 4.2% of total MVA), "Petroleum Refining" ($244 M or 1.6%), "Breweries" ($214 M or 1.4%), and "Distilleries" ($157 M or 1%). Another four industries accounted for more than $100 M each of MVA.[56]

Turning to enterprise concentration levels in 1972, basically the same pattern as for 1965 levels holds true. This becomes clear from the comparison of the cumulative number of industries in concentration brackets in Exhibits 19 and 23. Concentration in terms of the top-4 ratio showed an almost unchanged distribution among the three categories (*vid.* Exhibit 18) except for a slight shift of 5% of all industries from the 'low' to the 'medium' category. However, there are indications for a movement of concentration in the opposite direction. The more comprehensive tabulation of concentration brackets in terms of the H-Index in Exhibits 22 and 23 indicates a decline of the number of highly concentrated industries by five percentage points whereas the number of industries of low concentration increased by almost six percentage points. This may serve as a tentative indicator of the declining trend of concentration during 1965/1972, the more detailed analysis of which will be conducted with definitionally comparable industries below.

The rankings of the 20 industries with highest concentration levels in Exhibits 24 and 25 display no material differences from the 1965 lists. Again, there is a high degree of concordance: 21 industries appear on both lists,[57] and another four industries from the H-Index list would have made the top-4 list as well were it not for the confidentiality rules.[58]

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[56] "Tobacco Products Mfrs." ($142 M), "Cotton Yarn & Cloth Mills" ($123 M), "Rubber Tire & Tube Mfrs." ($118 M), and "Cement Mfrs." ($104 M).

[57] SIC 1810, 3652, 3290, 3561, 1831, 1093, 2591, 3180, 1530, 2960, 3570, and 3520.

[58] SIC 1891, 3230, 1510, and 2720.

Despite some 10 and 12 'newcomers' in Exhibits 24 and 25, respectively, there are, again, only four industries that accounted for more than 1% each of total MVA among the most highly concentrated industries, *viz.* "Motor Vehicle Mfrs." (MVA: $907 M or 3.7% of total MVA), "Smelting and Refining" ($531 M or 2.2%), "Breweries" ($358 M or 1.5%), and "Distilleries" ($324 M or 1.3%). Again, the overwhelming majority of industries represented were 'few-firm industries' with less than 20 enterprises each, *viz.* 16 out of the 20 industries on both lists.

332. Levels of Establishment Concentration, 1965 and 1972

In a given industry, establishment concentration is necessarily lower than enterprise concentration; at its upper limit, it achieves enterprise concentration levels if there are only single-establishment enterprises in an industry. This tendency is reflected in Exhibit 18 where 20% of all industries show high top-4 *establishment* concentration levels compared to 33% of all industries that display high *enterprise* concentration levels; the corresponding figures at the other end of the spectrum read 40% and 28%, respectively.[59] The more comprehensive assessment in terms of the H-Index in Exhibit 22 shows a wider margin in the establishment/enterprise comparison, *viz.* 5% *vs.* 14% in the 'high' bracket and 65% *vs.* 50% in the 'low' bracket. The classification of industry groups by concentration deciles puts the majority of industries in terms of top-4 establishment concentration in the range of 10 to 40% with the center in the 20-29% bracket. Roughly speaking, top-4 enterprise concentration levels were ahead by 10 percentage points, with the majority of industries in the 30-60% range (*vid. supra*). High top-4 establishment concentration is mainly represented in the following industry groups: Tobacco, Textiles, Primary Metals, Machinery, and Transportation Equipment. Analogous tendencies prevail in the assessment of establishment concentration in terms of the H-Index.

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[59] For economy reasons, the precise measurement of the difference between enterprise and establishment concentration in terms of the divergence concept was not conducted for all industries; rather, it was applied to the group of largest manufacturing industries only (*vid. infra*).

The listings of the 20 industries with highest establishment concentration levels in Exhibits 24 and 25 again show a high degree of concordance: 15 industries are represented on both lists and another two[60] would have made the top-4 list were it not for confidentiality reasons. A closer inspection of Exhibit 25 reveals that 10 industries were among the industries that had both highest enterprise and highest establishment concentration levels[61] mainly because they got close to levels of single-establishment industries.[62] The other 10 industries showed rather significant discrepancies between levels of enterprise and establishment concentration: they varied from a high of 46 points[63] for "Explosives and Ammunition Mfrs." to a low of 11 points for "Refractories Mfrs.". In fact, high positive correlation between the number of establishments per enterprise and discrepancy between levels of enterprise and establishment concentration seemed to hold true.[64]

The analysis of 1972 establishment concentration levels was seriously impeded by the high rate of withheld top-4 ratios because of confidentiality reasons (*vid.* Exhibit 17). Thus, it seems advisable to rely on concentration levels in terms of the H-Index only. A slight overall decline in establishment concentration levels can be observed from Exhibits 21 and 22 and from Chart 48: industries in the high and medium concentration brackets dropped by approximately three percentage points each (*vid.* Exhibit 22). According to Exhibit 25, nine industries were among the leaders in both enterprise and establishment concentration.[65] The remaining 11 industries from the

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[60] SIC 3230 and 2010-1.

[61] SIC 1250, 2010-1, 2470-2, 3290, 3230, 3550, 1391, 2120, 2960, and 3652.

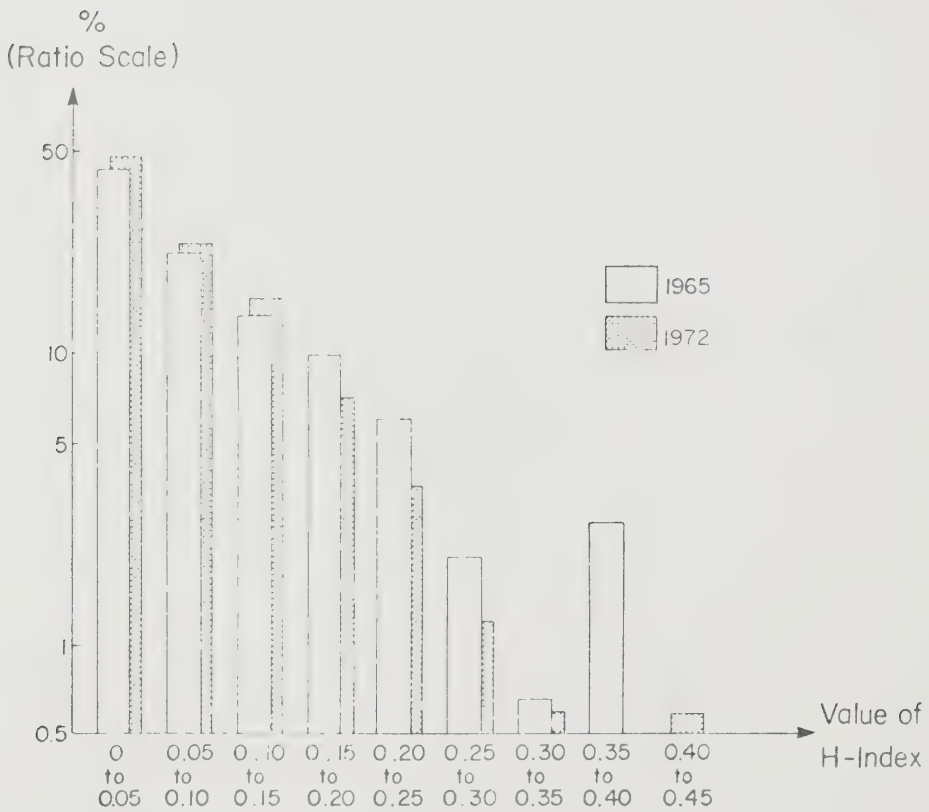
[62] The number of establishments per enterprise was less than 1.1 on the average, with the highest number being 1.21 for SIC 3520.

[63] Difference between the two H-Indexes times 100.

[64] The number of establishments per enterprise (first figure in parentheses) and difference in enterprise and establishment concentration levels are: SIC 1450 (4.7; 26), 3710 (2.5; 46), 3040-1 (2.2; 29), 1830 (2.2; 37), 1530 (1.7; 19), 2591 (1.5; 22), 3561 (1.5; 24), 2970 (1.3; 17), 2190 (1.2; 13), and 3520 (1.1; 11). Spearman's rank correlation coefficient yields a value of 0.87.

[65] SIC 3652, 3290, 1891, 1831, 2593, 3230, 3180, 1510, and 3591.

Chart 48. Percentage of All Manufacturing Industries by Specified Ranges of Hirschman-Herfindahl Indexes for Establishments, by Manufacturing Value Added, 1965 and 1972[a]



[a] Total value added in 1972.

Source: Exhibit 21.

enterprise concentration list, with lower levels of establishment concentration, again showed a positive correlation between numbers of establishments per enterprise and discrepancy between enterprise and establishment concentration levels although the strength of correlation was less than in 1965.[66]

333. Concentration Trends 1965/1972

The comparative analysis of concentration levels in 1965 and 1972 already indicated a slight decline of both enterprise and establishment concentration during that period. However, the analysis of concentration levels was based on all reported manufacturing industries, *viz.* 159 industries in 1965 and 171 industries in 1972. In addition to that divergent number of industries, the 1970 revision of the SIC for manufacturing industries (*vid.* Appendix) implied reclassifications and combinations of existing industries and introduction of new industries. Consequently, an analysis of concentration trends during 1965/1972 has to be based on definitionally comparable industries only. Of the 171 manufacturing industries listed in Table 2 of the 1970 publication of Statistics Canada [57, pp.56-74], some 129 fall in the aforementioned category and were, subsequently, updated with 1972 concentration data. Concentration data were reported for all 129 industries in terms of the H-Index and they represented 78% of all manufacturing shipments in 1972; top-4 ratios were reported for 103 industries, which represented 64% of all manufacturing shipments in 1972.

To begin with, top-4 concentration *levels*[67] by concentration decile in Exhibit 26 and Chart 49 display an almost identical percentage of

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[66] Number of establishments per enterprise (first figure in parentheses) and difference in enterprise and establishment concentration levels (*vid. supra*) are: SIC 1093 (6; 23), 3520 (3.2; 19), 1810 (3; 47), 2720 (2.8; 13), 3914 (2.2; 22), 3561 (2; 25), 2591 (1.6; 19), 1530 (1.5; 16), 3570 (1.3; 16), 2960 (1.2; 16), 3580 (1.2; 12). Spearman's rank correlation coefficient is 0.58.

[67] Only enterprise concentration trends have been considered.

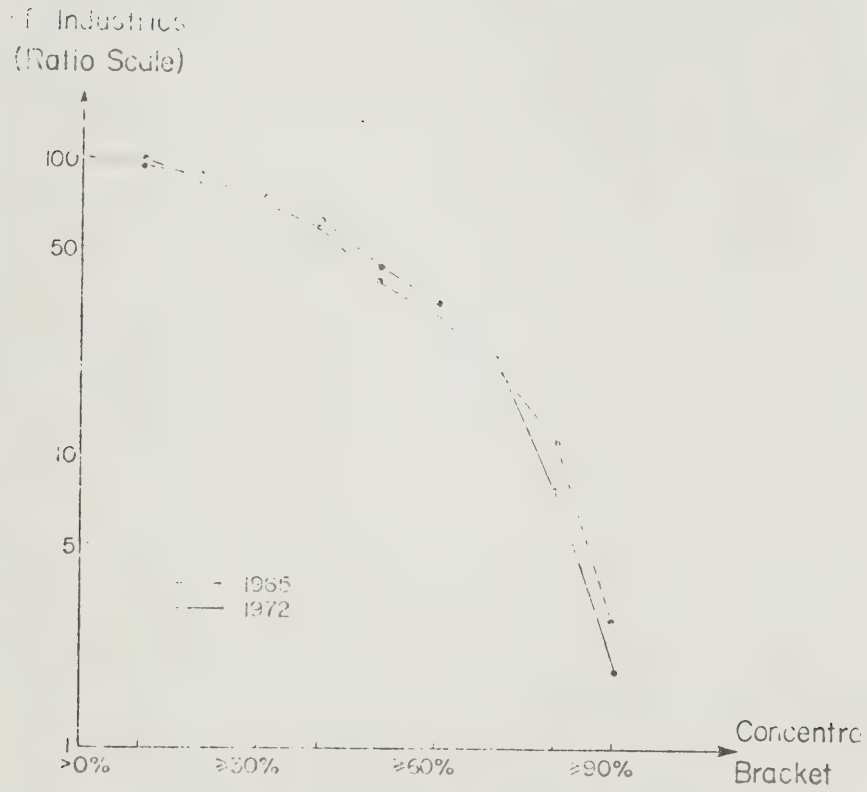
Exhibit 26. Percent of Manufacturing Industries by Value-of-Shipment Concentration Brackets for the First Four Enterprises, 103 Definitionally Comparable and Reported Industries, 1965 and 1972[a]

Concentration Bracket	Cumulative Percent of Industries	
	1965	1972
90% or more	2.9	1.9
80% or more	11.6	7.7
70% or more	20.4	21.3
60% or more	31.1	33.0
50% or more	38.8	43.7
40% or more	60.2	63.1
30% or more	71.8	75.7
20% or more	87.4	86.4
10% or more	97.1	98.0
0% or more	100.0	100.0
Total No. of Industries	103	103

a) Enterprises on an unconsolidated basis.

Sources: Statistics Canada [57, Table 2; 58].

Chart 49. Percent of Manufacturing Industries by Value-of-Shipment Concentration Brackets for the First Four Enterprises, 103 Definitionally Comparable and Reported Industries, 1965 and 1972[a]



[a] Enterprises on an unconsolidated basis.

Source: Exhibit 26.

industries in low, medium, and high concentration ranges. However, in 1965 there were 12 industries with ratios of more than 80% compared to 8 in 1972. The comparison in Exhibit 27 and Chart 50 in terms of the H-Index supports this trend inasmuch as it lists 13 industries with concentration levels in excess of 0.30 in 1965 compared to 5 in 1972.

A more detailed breakdown of concentration *trends* by industry groups, by percentage point change, and by point change is provided in Exhibits 28 and 29. The percentage distribution of industries by top-4 concentration changes[68] shows 46 industries (45%) with increases of concentration ratios of more than one percentage point and 45 industries (44%) with decreases of concentration ratios of more than one percentage point; the remaining 11 industries (11%) had virtually unchanged concentration ratios. Although the observed differences in this summary evaluation are too small to give a verdict on overall increase or decrease of concentration, an inspection of the two extremes is more helpful: 23 industries (50% of all industries with increases in concentration ratios) had increases of more than six percentage points during 1965/1972, whereas 19 industries (42% of all industries with decreases in concentration ratios) experienced corresponding declines. Consequently, concentration trends in terms of top-4 ratios showed a very slight tendency for an increase during 1965/1972.

The corresponding percentage distribution of industries in terms of the H-Index in Exhibit 29 follows a very similar pattern:[69] there were 53 industries (41%) with increases in concentration of more than 0.5 points compared to 52 industries (40%) with decreases of more than 0.5 points; virtually no change in concentration was recorded in 29 industries (19%). Yet, contrary to the findings with top-4 ratios in Exhibit 28, the upper end in the decrease section was more heavily populated than

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[68] The percentage distribution at the bottom of Exhibit 28 in terms of the *reported* 103 industries reads (from left to right): 13.7, 8.8, 12.7, 9.8, 10.8, 10.8, 14.7, 10.8, and 7.8.

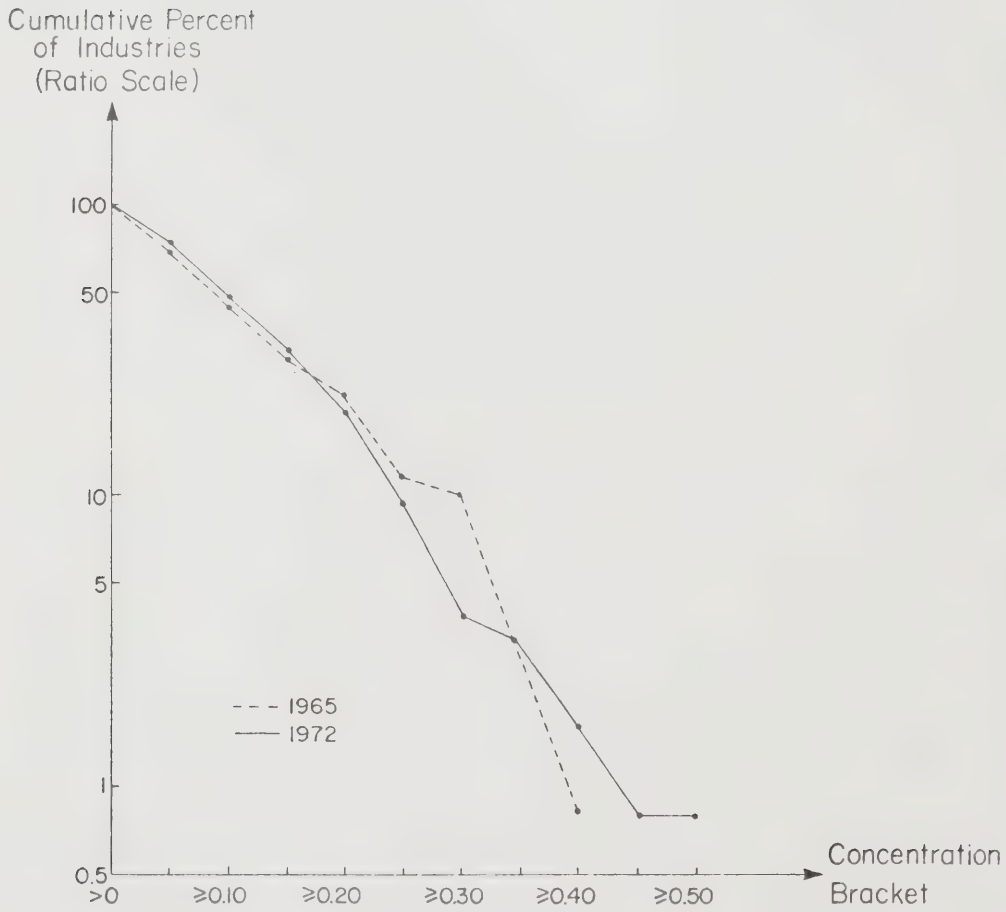
[69] The percentage distribution at the bottom of Exhibit 29 in terms of the 129 comparable industries reads (from left to right): 2.3, 7.0, 13.9, 7.0, 10.8, 18.6, 18.6, 7.0, 7.0, 11.6, 13.2, and 1.5.

Exhibit 27. Percent of Manufacturing Industries by Specified Ranges of Hirschman-Herfindahl Indexes on the Enterprise Level, by Value of Shipments, for 129 Definitionally Comparable and Reported Industries, 1965 and 1972

Concentration Bracket	Cumulative Percent of Industries	
	1965	1972
0.50 or more	-	0.8
0.45 or more	-	0.8
0.40 or more	0.8	1.6
0.35 or more	3.1	3.1
0.30 or more	10.1	3.9
0.25 or more	11.6	9.3
0.20 or more	22.4	19.4
0.15 or more	29.4	31.8
0.10 or more	47.2	47.3
0.05 or more	68.1	74.4
0 or more	100.0	100.0
Total No. of Industries	129	129

Source: vid. Exhibit 21.

Chart 50. Percent of Manufacturing Industries by Specified Ranges of Hirschman-Herfindahl Indexes on the Enterprise Level for 129 Definitionally Comparable and Reported Industries, by Value of Shipments, 1965 and 1972[a]



[a] Enterprises on an unconsolidated basis.

Source: Exhibit 27.

Exhibit 28. Value-of-Shipment Concentration Trends for the First Four Enterprises in 103 Definitionally Comparable and Reported Manufacturing Industries, by Major Industrial Groups, 1965/1972[a]

Industry Group	No. of Industries 1972	Percentage of Industries with Percentage Point Changes in Ratio: Increase in Ratio 9 or more	6 to 9	3 to 6	1 to 3	0[b]	Decrease in Ratio 1 to 3	3 to 6	6 to 9	9 or more	n.a.
Food and Beverage Ind.	18	5.5	11.1	5.5	16.7	5.5	-	11.1	5.5	-	38.9
Tobacco Products Ind.	2	-	50.0	-	-	-	-	-	-	-	50.0
Rubber Ind.[c]	2	-	-	-	-	-	-	-	-	50.0	50.0
Leather Ind.	5	20.0	20.0	20.0	20.0	20.0	-	-	-	-	-
Textile Ind.	16	12.5	-	-	-	6.2	-	-	-	12.5	68.7
Knitting Mills Ind.	3	-	33.3	-	-	-	-	-	-	-	66.7
Clothing Ind.	10	40.0	-	20.0	10.0	20.0	10.0	-	-	-	-
Wood Ind.	13	7.7	-	7.7	7.7	-	15.4	7.7	7.7	-	46.1
Furniture and Fixture Ind.	5	-	-	-	-	20.0	-	-	-	20.0	60.0
Paper and Allied Ind.	6	-	-	16.7	-	16.7	16.7	16.7	16.7	-	16.7
Printing, Publishing and Allied Ind.	4	25.0	25.0	-	-	-	25.0	25.0	-	-	-
Primary Metal Ind.	7	-	-	14.3	-	14.3	28.6	14.3	-	14.3	14.3
Metal Fabricating Ind.	11	9.1	-	-	-	-	9.1	18.2	9.1	9.1	45.4
Machinery Ind.	4	-	-	25.0	-	-	25.0	-	25.0	-	25.0
Transportation Equipment Ind.	10	-	-	-	20.0	-	10.0	10.0	-	-	60.0
Electrical Products Ind.	9	11.1	-	11.1	-	-	-	11.1	-	11.1	55.5
Non-Metallic Mineral Products Ind.	14	7.1	7.1	21.4	7.1	-	-	-	14.3	-	42.8
Petroleum and Coal Products Ind.	3	-	33.3	-	-	-	-	-	33.3	33.3	-
Chemical and Chemical Products Ind.	11	9.1	-	-	9.1	9.1	9.1	9.1	18.2	-	36.4
Miscellaneous Ind.	18	5.5	5.5	5.5	-	11.1	-	22.2	5.5		44.4
Total Manufacturing											
Percent	(100)	8.2	5.3	7.6	5.8	6.4	6.4	8.8	6.4	4.7	40.3
Number	171	15	9	13	10	11	11	15	11	8	68

a) Enterprises on an unconsolidated basis.
b) Increase of 1 to decrease of 1.
c) SIC 162 and SIC 165.

Sources: Statistics Canada [57, Table 2; 58].

Exhibit 29. Concentration Trends in 129 Definitionally Comparable and Reported Manufacturing Industries on the Enterprise Level in Terms of Hirschman-Herfindahl Indexes, by Manufacturing Value Added, by Major Industrial Groups, 1965/1972[a]

Industry Group	No. of Industries 1972	Percentage of Industries with Changes[b] in Index: Increase in Index: 8 or more	4 to 8	2 to 4	1 to 2	0.5 to 1	0[c]	Decrease in Index: 0.5 to 1	1 to 2	2 to 4	4 to 8	8 or more	n.a.
Food and Beverage Ind.	18	-	-	11.1	11.1	11.1	5.5	5.5	11.1	16.7	5.5	-	22.2
Tobacco Products Ind.	2	50.0	-	-	-	-	-	-	-	50.0	-	-	-
Rubber Ind.[d]	2	-	50.0	-	-	-	-	-	50.0	-	-	-	-
Leather Ind.	5	-	20.0	-	-	60.0	20.0	-	-	-	-	-	-
Textile Ind.	16	12.5	6.2	6.2	6.2	12.5	6.2	-	6.2	6.2	18.7	-	18.7
Knitting Mills Ind.	3	-	-	-	33.3	-	-	-	-	-	-	-	66.7
Clothing Ind.	10	-	20.0	10.0	20.0	-	50.0	-	-	-	-	-	-
Wood Ind.	13	-	-	15.4	-	7.7	7.7	7.7	-	15.4	7.7	-	38.5
Furniture and Fixture Ind.	5	-	-	-	-	-	40.0	-	-	20.4	-	-	40.0
Paper and Allied Ind.	6	-	-	-	-	16.7	16.7	33.3	16.7	-	-	-	16.7
Printing, Publishing and Allied Ind.	4	-	-	25.0	-	-	50.0	25.0	-	-	-	-	-
Primary Metal Ind.	7	-	-	-	-	28.6	-	14.3	-	-	57.1	-	-
Metal Fabricating Ind.	11	-	9.1	9.1	-	-	9.1	9.1	-	9.1	9.1	-	45.4
Machinery Ind.	4	-	-	25.0	25.0	-	25.0	-	-	-	-	-	25.0
Transportation Equipment Ind.	10	-	10.0	-	-	10.0	10.0	-	10.0	10.0	20.0	-	30.0
Electrical Products Ind.	9	-	-	22.2	-	11.1	-	-	11.1	11.1	-	11.1	33.3
Non-Metallic Mineral Products Ind.	14	-	7.1	7.1	7.1	-	14.3	7.1	-	-	14.3	7.1	35.7
Petroleum and Coal Products Ind.	3	-	-	-	-	33.3	-	-	-	-	66.7	-	-
Chemical and Chemical Products Ind.	11	-	9.1	9.1	-	-	18.2	-	-	27.3	-	-	36.4
Miscellaneous Manufact. Ind.	18	-	-	27.8	11.1	-	16.7	5.5	11.1	5.5	5.5	-	16.7
Total Manufacturing Percent	(100)	1.7	5.3	10.5	5.3	8.2	14.0	5.3	5.3	8.8	9.9	1.2	24.6
Number	171	3	9	18	9	14	24	9	9	15	17	2	42

a) Enterprises on an unconsolidated basis.
b) Difference times 100.
c) Increase of 0.5 to decrease of 0.5.
d) SIC 162 and 165; the Hirschman-Herfindahl Index for SIC 161, 163, and 169 combined in 1965 was 0.0743.

Sources: Statistics Canada [57, Table 2; 58].

the one at the other end of the spectrum: there were 12 industries with increases in concentration of more than four points (23% of all industries with increases in concentration) *vs.* 19 industries with decreases of more than four points (37% of all industries with increases in concentration). Thus, the trends indicate a slight decline of concentration in terms of the H-Index during 1965/1972.

To summarize, a comparison of concentration levels in 1965 and 1972 reveals that concentration declined. This is supported by an evaluation of concentration trends, albeit a minimal support only.

34. Detailed Analysis of Concentration in the Nine Largest Manufacturing Industries

In view of the large number of individual industries covered in the concentration statistics of Statistics Canada,[70] a selection procedure for a detailed analysis had to be conducted. As can be seen from Table 8, a criterion of industry shipments in excess of $500 M in 1972 would leave 25 industries in the sample. If this is raised to '$1 B and more', only nine manufacturing industries remain which seems to represent the operational size. Ranked by 1972 manufacturing value added, they are: Pulp and Paper Mills (SIC 271), Iron and Steel Mills (291), Motor Vehicle Mfrs. (323), Motor Vehicle Parts and Accessories Mfrs. (325), Sawmills and Planing Mills (2513), Misc. Machinery and Equipment Mfrs. (315), Petroleum Refining (3651), Slaughtering and Meat Processors (1011), and Dairy Products Industries (1040). Altogether, these nine industries accounted for 37% of total manufacturing shipments, 28% of total manufacturing value added, and 24% of total employment in the manufacturing sector, leaving the remainder of 63%, 72%, and 76%, respectively, to the rest of 193 manufacturing industries. Thus, the nine aforementioned industries are highly representative of concentration levels and trends despite the biased composition of the sample.

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[70] Out of a total of 202 manufacturing industries according to the SIC (1970 revision), 171 reported manufacturing industries were included in 1970 and 1972.

The results of the analysis of concentration for the nine industries are summarized in Exhibit 30. In addition to the published concentration figures in terms of concentration ratios and H-Indexes for enterprises and establishments, a quantitative assessment of the divergence between enterprise concentration and establishment concentration is made possible with a numerical expression for the area between the two concentration curves.[71] The concept of divergence, which has been depicted in Charts 51-59, gains momentum if the background of establishment concentration and enterprise concentration is kept in mind, *i.e.* the former one reflecting the technological aspects and the latter one the financial aspects of concentration, respectively [8]. Thus, one can expect divergence to be wide[72] in an industry with many multi-establishment enterprises, whereas narrow divergence may be expected in industries with many single-establishment enterprises [*cf.* 48, pp.59-63; 12, pp.32-35]. The present sample of industries is too small to prove any systematic tendencies to that effect, yet the two industries at the extremes may be indicative of the aforementioned relationship. The widest divergence among the nine industries is recorded in "Petroleum Refining" in both 1965 and 1972 (*vid.* Chart 55), and this industry also had the highest average number of establishments per enterprise, *viz.* 3.3 in 1965 and 2.9 in 1972. At the other end of the spectrum, the same perfect correlation

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[71] The formula for the area of divergence, A, reads [36, p.3427]:

$$A = [0.5(CR_4^{Ent.} - CR_4^{Est.}) + (CR_8^{Ent.} - CR_8^{Est.}) + (CR_{20}^{Ent.} - CR_{20}^{Est.}) + 0.5(CR_{50}^{Ent.} - CR_{50}^{Est.})]/(0.5CR_4^{Ent.} + CR_8^{Ent.} + CR_{20}^{Ent.} + 0.5CR_{50}^{Ent.}) \qquad 0 < A \leq 1$$

[72] According to Blair [8, p.1547; 9, p.103], the following classification of divergence levels is suggested (in percent):

Wide Divergence: 20 and more

Medium Divergence: 10-20

Narrow Divergence: under 10

Exhibit 30. Detailed Analysis of Concentration Levels and Trends for the Nine Largest Canadian Manufacturing Industries, Ranked by 1972 Manufacturing Value Added, 1965-1972

Business Activity Indicators

1970 SIC Code	Industry	Year	No. of Enterprises	No. of Establishments	Man. Value Added $M	Man. Value Added Percent of Total	Value of Man. Shipments $M	Value of Man. Shipments Percent of Total	Total Employment '000	Total Employment Percent of Total
2710	Pulp and Paper Mills	1965	56	132	1,033.5	6.9	2,104.4	6.2	69.9	4.4
		1972	65	141	1,374.1	5.6	3,127.8	5.6	79.0	4.7
2910	Iron and Steel Mills	1965	32	41	646.1	4.3	1,231.8	3.6	44.3	2.8
		1972	35	48	909.4	3.7	1,900.8	3.4	49.8	3.0
3230	Motor Vehicle Manufacturers	1965	20	20	631.4	4.2	2,120.3	6.2	42.4	2.7
		1972	17	22	906.8	3.7	4,033.6	7.2	44.0	2.6
3250	Motor Vehicle Parts & Access. Manufacturers	1965	149	160	326.6	2.2	755.6	2.2	32.0	2.0
		1972	171	211	866.6	3.6	1,903.1	3.4	46.2	2.7
2513	Sawmills and Planning Mills	1965	2,464	2,559	384.5	2.6	896.2	2.6	50.8	3.2
		1972	1,463	1,567	864.9	3.5	1,893.6	3.4	57.1	3.4
3150	Misc. Machinery & Equipment Mfrs.	1965	501	528	419.7	2.8	797.1	2.3	44.0	2.8
		1972	710	759	717.1	2.9	1,454.5	2.6	53.3	3.2
3651	Petroleum Refining	1965	12	40	244.1	1.6	1,383.6	4.1	9.0	0.6
		1972	14	41	431.3	1.8	2,361.7	4.2	14.4	0.9
1011	Slaughtering and Meat Processors	1965	365	399	267.3	1.8	1,438.7	4.2	30.0	1.9
		1972	415	468	428.6	1.7	2,551.4	4.5	31.3	1.9
1040[b]	Dairy Products Industries	1965	1,165	1,421	277.4	1.8	1,061.7	3.1	33.5	2.1
		1972	498	731	392.1	1.6	1,573.7	2.8	28.9	1.7

Exhibit 30 continued

Concentration Levels, 1965 and 1972

1970 SIC Code	Year	Value-of-Shipment Concentration Ratios for the . . . Largest Enterprises[a]				Value-of-Shipment Concentration Ratios for the . . . Largest Establishments				Divergence between Enterprise and Establishment Concentration
		4	8	20	50	4	8	20	50	
2710	1965	36.9	57.1	86.3	99.9	12.0	20.9	41.7	75.5	0.4979
	1972	34.4	52.5	80.1	98.5	10.9	19.4	37.4	68.0	0.5164
2910	1965	78.8	90.3	98.6	...	73.3	83.2	95.2	...	0.0580
	1972	77.7	90.7	98.5	...	71.2	81.4	94.5	...	0.0726
3230	1965	93.3	98.2	100.0	...	x[f]	x[g]	100.0	...	0.0060[j]
	1972	x[e]	98.1	...	...	x[f]	x[g]	x	...	0.0457[j]
3250	1965	54.2	64.4	80.7	93.8	43.0[c]	57.2	76.2	91.4	0.0765[k]
	1972	48.8	64.8	79.6	92.8	42.5	51.8	66.6	84.5	0.1547
2513	1965	16.8	26.7	36.9	51.1	10.1	16.1	27.3	41.4	0.2911
	1972	18.2	27.7	43.0	62.3	9.6	14.7	25.4	42.4	0.4042
3150	1965	15.0	24.3	41.5	63.2	x[h]	22.3	36.8	58.5	0.0890[l]
	1972	12.5	21.7	36.5	55.0	11.5	19.7	32.7	49.8	0.0968
3651	1965	84.8	98.1	...	...	30.0	47.0	80.3[d]	...	0.5587
	1972	73.7	94.6	...	...	26.9	44.1	79.1	...	0.5622
1011	1965	58.0	67.5	77.3	88.0	x	x[i]	55.5	79.2	0.3400[j]
	1972	53.9	62.0	72.9	85.8	x	30.2	50.2	73.5	0.3900[l]
1040[b]	1965	25.1	34.8	48.8	62.2	10.4	14.8	24.0	38.8	0.5018
	1972	33.0	45.8	62.2	78.7	14.5	20.1	31.2	48.8	0.4937

Exhibit 30 continued

Concentration Levels, 1965 and 1972

1970 SIC Code	Year	Hirschman-Herfindahl Indexes					
		Enterprises			Establishments		
		Value of Man. Shipments	Man. Value Added	Total Employment	Value of Man. Shipments	Man. Value Added[m]	Total Employment
2710	1965	0.0546	0.0549	0.0570	0.0144	0.0151	0.0132
	1972	0.0469	0.0508	0.0494	0.012	0.014	0.012
2910	1965	0.1982	0.2101	0.1719	0.1753	0.1927	0.1555
	1972	0.2078	0.2212	0.1818	0.177	0.202	0.159
3230	1965	0.3196	0.3296	0.2870	0.3123	0.3217	0.2784
	1972	0.2913	0.3012	0.2617	0.199	0.267	0.196
3250	1965	0.1373	0.1305	0.1033	0.0957	0.0987	0.0758
	1972	0.0816	0.0810	0.0561	0.059	0.057	0.038
2513	1965	0.0121	0.0101	0.0074	0.0063	0.0049	0.0037
	1972	0.0155	0.0123	0.0123	0.006	0.005	0.005
3150	1965	0.0129	0.0152	0.0148	0.0113	0.0136	0.0130
	1972	0.0101	0.0106	0.0100	0.009	0.009	0.008
3651	1965	0.2165	0.2287	0.2309	0.0435	0.0400	0.0447
	1972	0.1655	0.1890	0.2186	0.041	0.049	0.041
1011	1965	0.1323	0.1135	0.1085	0.0281	0.0260	0.0250
	1972	0.1051	0.1026	0.0926	0.021	0.026	0.023
1040[b]	1965	0.0230	0.0332	0.0242	0.0070	0.0115	0.0044
	1972	0.0409	0.0548	0.0385	0.012	0.025	0.008

Exhibit 30 continued

Concentration Trends, 1965/1972

1970 SIC Code	Percentage Point Change in Concentration Ratios for the . . . Largest Enterprises[a]				Percentage Point Change in Concentration Ratios for the . . . Largest Establishments				Percent Change in Divergence
	4	8	20	50	4	8	20	50	
2710	-2.5	-4.6	-6.2	-1.4	-1.1	-1.5	-4.3	-7.5	3.7
2910	-1.1	0.4	-0.1	-	-2.1	-1.8	-0.7	-	25.2
3230	..	-0.1	-	-	..	..	..	-	661.7
3250	-5.4	0.4	-1.1	-1.0	-0.5	-5.4	-9.6	-6.9	102.2
2513	1.4	1.0	6.1	11.2	-0.5	-1.4	-1.9	1.0	38.8
3150	-2.5	-2.6	-5.0	-8.2	..	-2.6	-4.1	-8.7	8.7
3651	-11.1	-3.5	-	-	-3.1	-2.9	-1.2	-	0.6
1011	-4.1	-5.5	-4.4	-2.2	..	..	-5.3	-5.7	14.7
1040[b]	7.9	11.0	13.4	16.5	4.1	5.3	7.2	10.0	-1.6

1970 SIC Code	Changes in Hirschman-Herfindahl Indexes[n]					
	Enterprises[a]			Establishments		
	Value of Man. Shipments	Man. Value Added	Employment	Value of Man. Shipments	Man. Value Added[m]	Employment
2710	-0.77	-0.41	-0.76	-0.24	-0.11	-0.12
2910	0.96	1.11	0.99	0.11	0.93	0.35
3230	-2.83	-2.84	-2.53	-11.33	-5.47	-8.24
3250	-5.57	-4.95	-4.72	-3.67	-4.17	-3.78
2513	0.34	0.22	0.49	-0.03	0.01	0.13
3150	-0.28	-0.46	-0.48	-0.23	-0.46	-0.50
3651	-5.10	-3.97	-1.23	-0.25	0.90	-0.37
1011	-2.72	-1.09	-1.59	-0.71	-	-0.20
1040[b]	1.79	2.16	1.43	0.50	1.35	0.36

Evaluation of Concentration Trends, 1965/1972

1970 SIC Code	Enterprise Concentration[a]		Establishment Concentration		Divergence
	Concentration Ratios	Hirschman-Herfindahl Index	Concentration Ratios	Hirschman-Herfindahl Index	
2710	Decline	Decline	Decline	Decline	Widening
2910	Decline	Increase	Decline	Increase	Widening
3230	Decline?	Decline	Decline?	Decline	Widening
3250	Decline	Decline	Decline	Decline	Widening
2513	Increase	Increase	Decline	Increase	Widening
3150	Decline	Decline	Decline	Decline	Widening
3651	Decline	Decline	Decline	Decline	Widening
1011	Decline	Decline	Decline	Decline	Widening
1040[b]	Increase	Increase	Increase	Increase	Narrowing

Exhibit 30 continued

Classification of Enterprise Concentration Levels and of Divergence, 1972

1970 SIC Code	Level of Enterprise Concentration		Divergence
	Top-4 Ratio	Hirschman-Herfindahl Index	
2710	Medium	Low	Wide
2910	High	Medium	Narrow
3230	High	High	Narrow
3250	Medium	Low	Intermediate
2513	Low	Low	Wide
3150	Low	Low	Narrow
3651	High	Medium	Wide
1011	Medium	Medium	Wide
1040	Medium	Low	Wide

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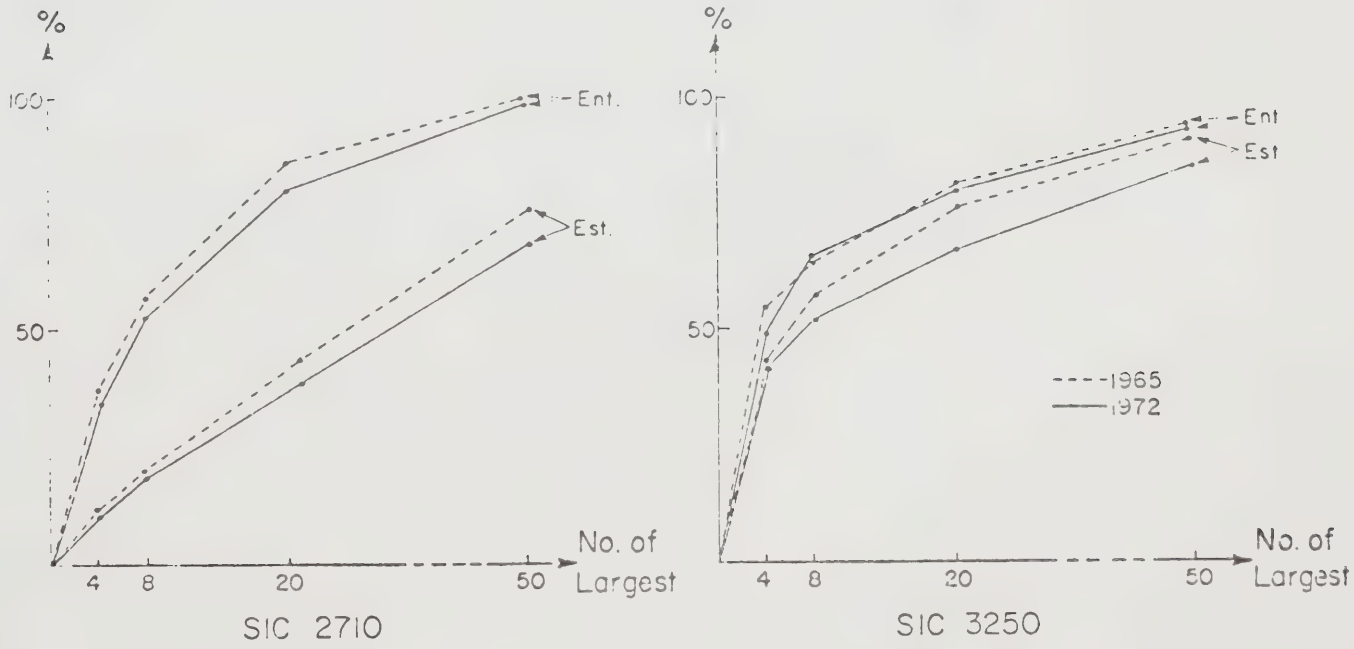
a) Unconsolidated.
b) SIC 1060 from 1965 Concentration Report [12].
c) From 1965 Concentration Report [12].
d) SIC 3650 from 1965 Concentration Report [12].
e) 93.3 in 1970.
f) 86.2 in 1968.
g) 96.9 in 1968; 96.1 in 1970.
h) 14.3 in 1968.
i) 33.6 in 1968 (SIC 1010).
j) Calculated by Manufacturing and Primary Industries Division, Statistics Canada.
k) Based on concentration ratios from 1965 Concentration Report [12].
l) Estimate based on information from the Manufacturing and Primary Industries Division, Statistics Canada.
m) Total value added in 1972.
n) Difference times 100.

Sources: Canada [12, Tables A-1 & A-3]; Statistics Canada [56; 57; 58].

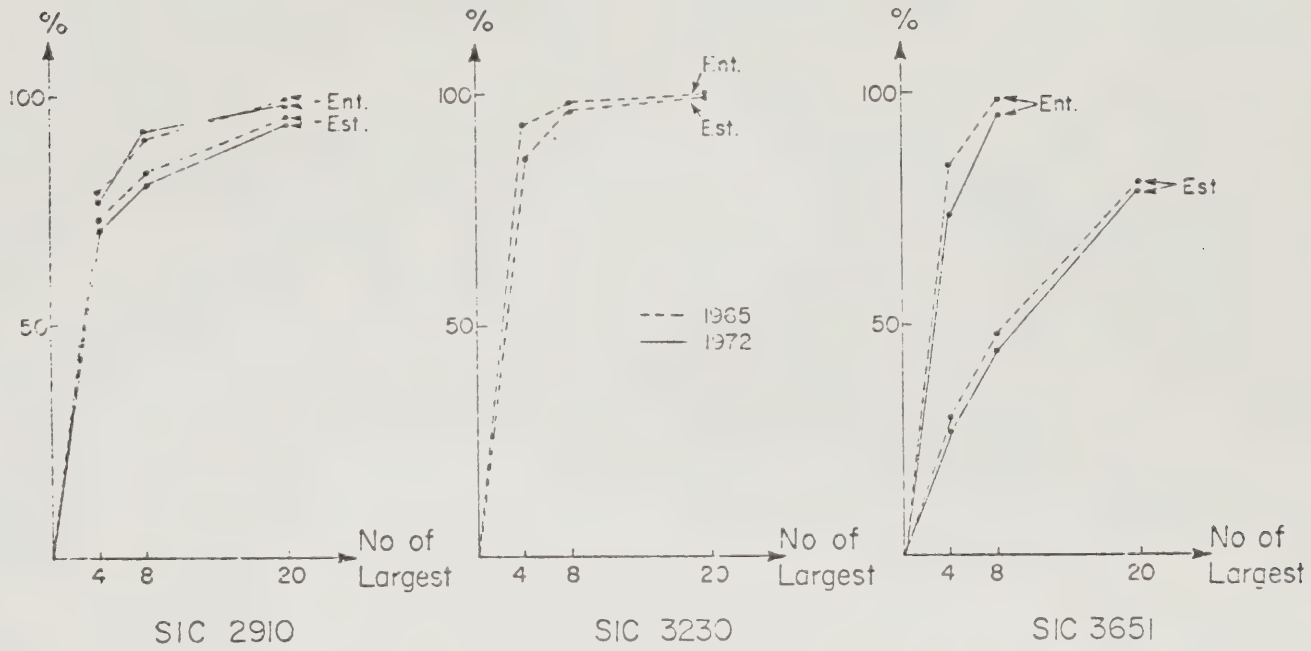
Charts 51 and 52. Concentration Curves for Enterprises and Establishments in the Nine Largest Canadian Manufacturing Industries, 1965 and 1972[a]



[a] Industries with shipments of more than $1 B in 1972.

Source: Exhibit 30.

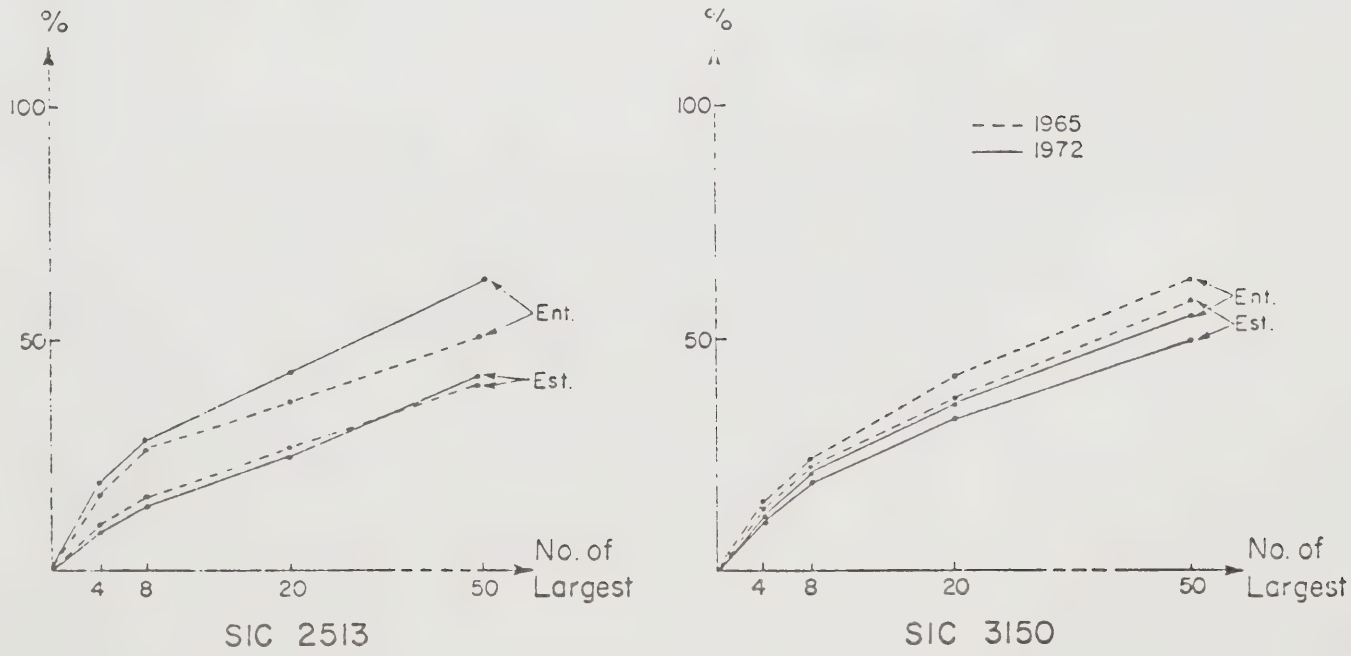
Charts 53, 54, and 55. Concentration Curves for Enterprises and Establishments in the Nine Largest Canadian Manufacturing Industries, 1965 and 1972[a]



[a] Industries with shipments of more than $1 B in 1972.

Source: Exhibit 30.

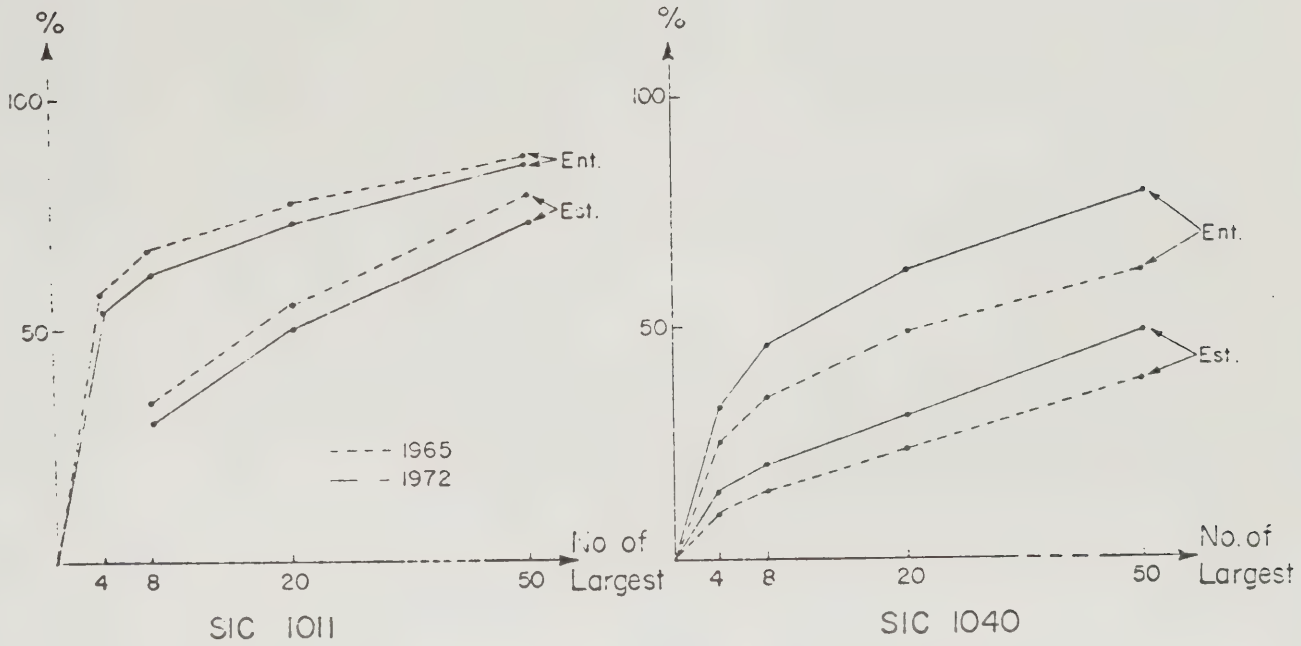
Charts 56 and 57. Concentration Curves for Enterprises and Establishments in the Nine Largest Canadian Manufacturing Industries, 1965 and 1972[a]



[a] Industries with shipments of more than $1 B in 1972.

Source: Exhibit 30.

Charts 58 and 59. Concentration Curves for Enterprises and Establishments in the Nine Largest Canadian Manufacturing Industries, 1965 and 1972[a]



[a] Industries with shipments of more than $1 B in 1972.

Source: Exhibit 30.

applied to "Motor Vehicle Mfrs.", the industry with the narrowest divergence (*vid.* Chart 54) in both 1965 and 1972 with establishment-enterprise ratios of 1 and 1.3, respectively.[73]

As already mentioned, there was a slight tendency for concentration to decline in 1965/1972. The analysis of concentration trends in the nine largest industries lent strong support to this effect: six of the nine industries show enterprise and establishment concentration to decline both in terms of concentration ratios and H-Indexes[74] (*vid.* Charts 60 and 61). Concentration in "Iron and Steel" declined in terms of concentration ratios but increased in terms of H-Indexes. Only in two industries, "Sawmills and Planing Mills" and "Dairy Products Industries", did concentration increase. The latter industry was the only one in which the gap between enterprise and establishment concentration was narrowing during 1965/1972 with all other eight industries showing a more or less substantial widening of the gap caused by a higher relative decrease in establishment concentration.

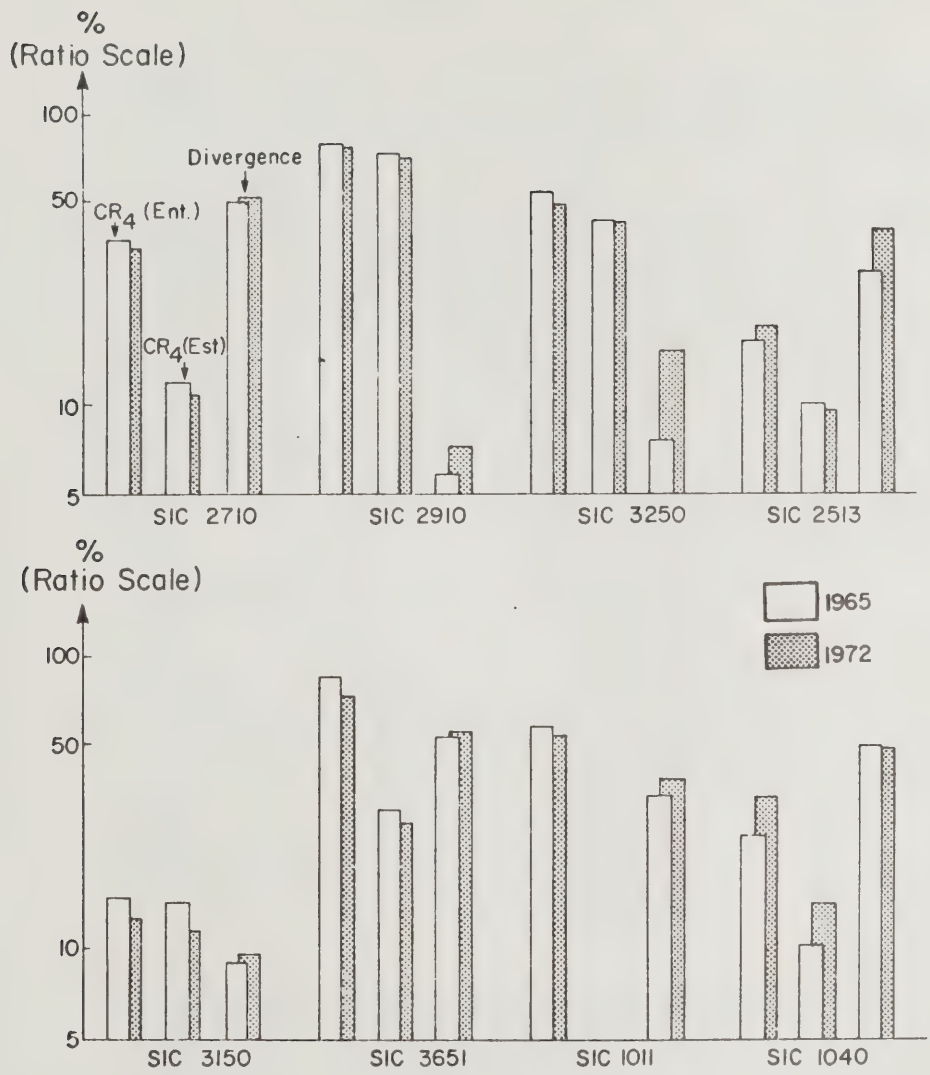
It is also interesting to note that apparently there is no relationship between enterprise concentration levels and levels of divergence [*cf.* 8]: narrow divergence is represented both among highly concentrated industries (Motor Vehicle Mfrs.) and among industries with low concentration (Misc. Machinery and Equipment Mfrs.); on the other hand, wide divergence is to be found in highly concentrated industries (Petroleum Refining) and in industries of low concentration (Sawmills and Planing Mills) as well.

---

[73] Although some industries followed that pattern of a very close relationship (SIC 2710, 3250, 3150, 1011, and 1040), others did not (SIC 2910 and 2513). Consequently, the rank correlation between number of establishments per enterprise and divergence assumed medium levels only, *viz.* 0.65 in 1965 and 0.53 in 1972.

[74] SIC 2710, 3230, 3250, 3150, 3651, and 1011.

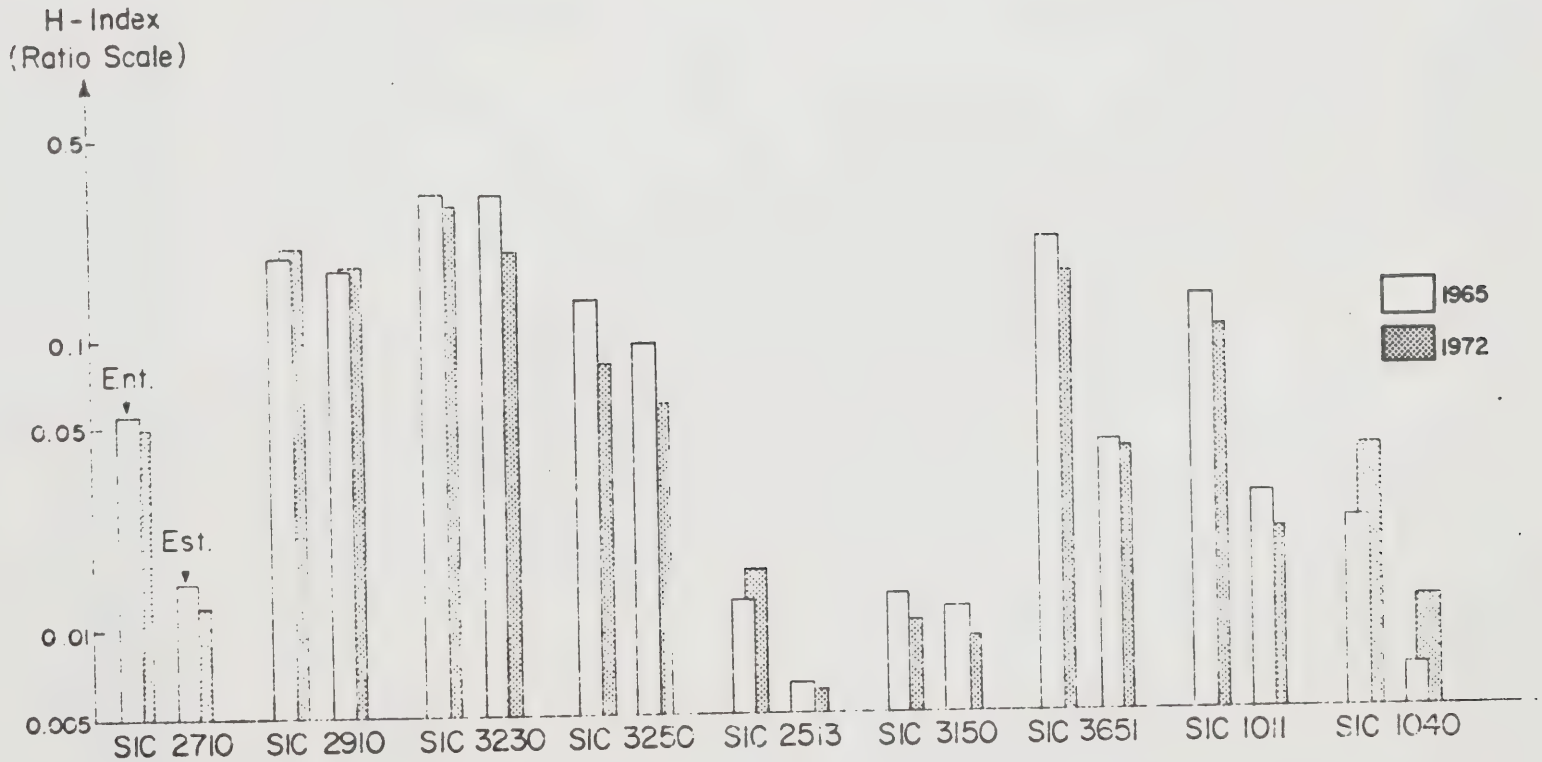
Chart 60. Concentration Levels for the First Four Enterprises/ Establishments and Divergence Between Enterprise and Establishment Concentration in the Nine Largest Canadian Manufacturing Industries, 1965 and 1972[a]



[a] Industries with shipments of more than $1 B in 1972; omitting SIC 3230; divergence times 100.

Source: Exhibit 30.

Chart 61. Hirschman-Herfindahl Indexes for Enterprises and Establishments in the Nine Largest Canadian Manufacturing Industries, by Value of Manufacturing Shipments, 1965 and 1972[a]



[a] Industries with shipments of more than $1 B in 1972.

Source: Exhibit 30.

Chapter 4

Concentration in the Mining and Logging Industries of Canada, 1968-1972

From 1968 onwards, the biennial publication of concentration data by Statistics Canada was extended to include major parts of Mining (Division 4) and Forestry (Division 2).[73]

Top-4 enterprise concentration data were reported for 12 mining industries in 1968 and for 17 mining industries in 1972. As can be seen from Exhibit 31, two-thirds of the reported industries had high concentration levels in 1968. By 1972, their share had increased by 10 percentage points with a marked increase in the number of mining industries in the very highest concentration bracket of 90% and more, *viz.* from one industry in 1968 to five in 1972. This substantial increase of enterprise concentration in 1968/1972 is underlined with the more comprehensive coverage in terms of the H-Index in Exhibit 32: again, the number of industries in the high concentration bracket increased by 10 percentage points; the number of industries with H-Indexes of more than 0.45 increased from two to five in 1968/1972. Highest concentration levels appear in "Metal Mines", followed by "Non-Metal Mines", whereas "Quarries and Sand Pits" show a dominance of low concentration.

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[73] Reported concentration data for the mining industries exclude major groups 2 (SIC 06: Mineral Fuels) and 5 (SIC 09: Services Incidental to Mining) in Mining; basic data for "Coal Mines" (SIC 061) are not available in machine-readable form, and the ones for "Petroleum and Gas Wells" (SIC 064) are unavailable since petroleum companies do not keep separate records for establishments in these operations. Data for "Services Incidental to Mining" are not collected.

According to the Census of Population in June 1971, the excluded industries accounted for approximately 35% of the total employment in Mining.

"Logging" accounted for approximately 85.5% of the total employment in Forestry.

Exhibit 31. Number and Percentage of Industries in Major Industrial Groups by Decile Percentage Brackets for Value-of-Shipment Concentration Ratios for the First Four Enterprises[a] and Establishments in All Mining Industries[b], 1968 and 1972

Industry Group	No. of Industries	Mining Value Added % of Total	Percentage of Industries with Ratios of 90 to 100	80 to 89	70 to 79	60 to 69	50 to 59	40 to 49	30 to 39	20 to 29	10 to 19	0 to 9	n.a.
1968 Enterprises													
Metal Mines	9	81.1	11.1	11.1	33.3	11.1	11.1	11.1	-	-	-	-	11.1
Non-Metal Mines	4	14.2	-	-	25.0	25.0	-	-	-	-	-	-	50.0
Quarries and Sand Pits	2	4.7	-	-	-	-	-	-	-	50.0	50.0	-	-
Total Mining[b]													
Percentage	(100)	100.0	6.7	6.7	26.7	13.3	6.7	6.7	-	6.7	6.7	-	13.3
Number	15	($1,804 M)	1	1	4	2	1	1	-	1	1	-	3
1972 Enterprises													
Metal Mines[c]	10	78.0	30.0	10.0	20.0	20.0	10.0	-	-	-	-	-	10.0
Non-Metal Mines[d]	7	16.4	28.6	14.3	14.3	14.3	-	14.3	-	-	-	-	14.3
Quarries and Sand Pits	2	5.5	-	-	-	-	-	-	50.0	50.0	-	-	-
Total Mining[b]													
Percentage	(100)	100.0	26.3	10.5	15.8	15.8	5.3	5.3	5.3	5.3	-	-	10.5
Number	19	($1,962 M)	5	2	3	3	1	1	1	1	-	-	2

Exhibit 31 continued

Industry Group	No. of Industries	Percentage of Industries with Ratios of 90 to 100	80 to 89	70 to 79	60 to 69	50 to 59	40 to 49	30 to 39	20 to 29	10 to 19	0 to 9	n.a.
1968 Establishments												
Metal Mines	9	-	-	-	22.2	11.1	11.1	-	-	-	-	55.5
Non-Metal Mines	4	-	-	-	-	-	-	-	-	-	-	100.0
Quarries and Sand Pits	2	-	-	-	-	-	-	-	-	100.0	-	-
Total Mining[b]												
Percentage	(100)	-	-	-	13.3	6.7	6.7	-	-	13.3	-	60.0
Number	15	-	-	-	2	1	1	-	-	2	-	9
1972 Establishments												
Metal Mines[c]	10	20.0	-	10.0	10.0	20.0	-	20.0	-	-	-	20.0
Non-Metal Mines[d]	7	14.3	-	14.3	14.3	-	14.3	-	-	-	-	42.3
Quarries and Sand Pits	2	-	-	-	-	-	-	-	-	50.0	-	50.0
Total Mining[b]												
Percentage	(100)	15.8	-	10.5	10.5	10.5	5.3	10.5	-	5.3	-	31.2
Number	19	3	-	2	2	2	1	2	-	1	-	6

a) Unconsolidated.
b) Excluding Major Groups 2 ("Mineral Fuels") and 5 ("Services Incidental to Mining").
c) "Uranium Mines" (SIC 057) had three enterprises only, was inserted as "100%".
d) Excluding "Salt Mines" (SIC 0793).

Sources: Statistics Canada [56, Table 1; 58].

Exhibit 32. Number and Percentage of Industries in Major Industrial Groups by Specified Ranges of Hirschman-Herfindahl Indexes, by Mining Value Added for Enterprises[a] in All Mining Industries[b], 1968 and 1972

Industry Group	No. of Industries	0.65 to 0.70	0.60 to 0.65	0.55 to 0.60	0.50 to 0.55	0.45 to 0.50	0.40 to 0.45	0.35 to 0.40	0.30 to 0.35	0.25 to 0.30	0.20 to 0.25	0.15 to 0.20	0.10 to 0.15	0.05 to 0.10	0 to 0.05
1968 Enterprises															
Metal Mines	9	11.1	-	-	-	-	-	-	11.1	-	22.2	22.2	22.2	11.1	-
Non-Metal Mines	4	-	-	-	25.0	-	-	-	-	25.0	50.0	-	-	-	-
Quarries and Sand Pits	2	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0
Total Mining[b]															
Percentage	(100)	6.7	-	-	6.7	-	-	-	6.7	6.7	26.7	13.3	13.3	6.7	13.3
Number	15	1	-	-	1	-	-	-	1	1	4	2	2	1	2
1972 Enterprises															
Metal Mines	10	20.0	-	-	-	20.0	-	-	-	10.0	-	30.0	20.0	-	-
Non-Metal Mines[c]	7	-	-	-	14.3	-	-	-	-	14.3	28.6	28.6	14.3	-	-
Quarries and Sand Pits	2	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0
Total Mining[b]															
Percentage	(100)	10.5	-	-	5.3	10.5	-	-	-	10.5	10.5	26.3	15.8	-	10.5
Number	19	2			1	2				2	2	5	3	-	2

a) Unconsolidated; concentration data for establishments not available.
b) Excluding Major Groups 2 ("Mineral Fuels") and 5 ("Services Incidental to Mining").
c) Excluding "Salt Mines" (SIC 0793).

Sources: Statistics Canada [56, Table 5; 58].

Establishment concentration data are not available in terms of the H-Index, and the high rate of unreported top-4 ratios does not allow for a reliable assessment of concentration levels and trends. However, the scattered information in Exhibit 31 seems to follow the same pattern as for enterprise concentration, *viz.* high and increased concentration levels in 1968/1972.

Concentration data in the logging industries were reported for one 3-digit industry (SIC 031) in 1968 and for two 4-digit industries (SIC 0311 and 0319) from 1970 onwards. Top-4 enterprise concentration levels in the two industries showed medium concentration for both 1970 and 1972 with a decline of approximately four percentage points each in 1970/1972. Concentration was low in terms of the H-Index which also declined slightly.

Chapter 5

Canadian Concentration Levels and Trends in International Perspective

International comparison of available official concentration data,[74] as published by government institutions, is confronted with the problem of different statistical bases for the data and conceptual differences in their presentation [*cf.* 5; 46]. In the present context, the Canada-United States comparison is of particular interest and will be considered separately. The scope of the subsequent inclusion of other countries was limited to industrialized countries and was governed by the availability of concentration ratios.

51. Canada-United States

511. Overall Concentration

As a proxy for the missing historical perspective of overall concentration in Canada (*vid. supra*), some series from the U.S. economy are presented in Chart 62. The first two series extend back to 1909 and cover a period of 24 and 49 years, respectively, for which an increase of 21.5% for the 200 largest non-financial corporations and 12.1% for the 100 largest manufacturing, mining, and distribution corporations has been recorded.[75] Like the two aforementioned series, post-war data on a group of largest non-financial corporations in the third series display, again, a clear upward trend in overall concentration.

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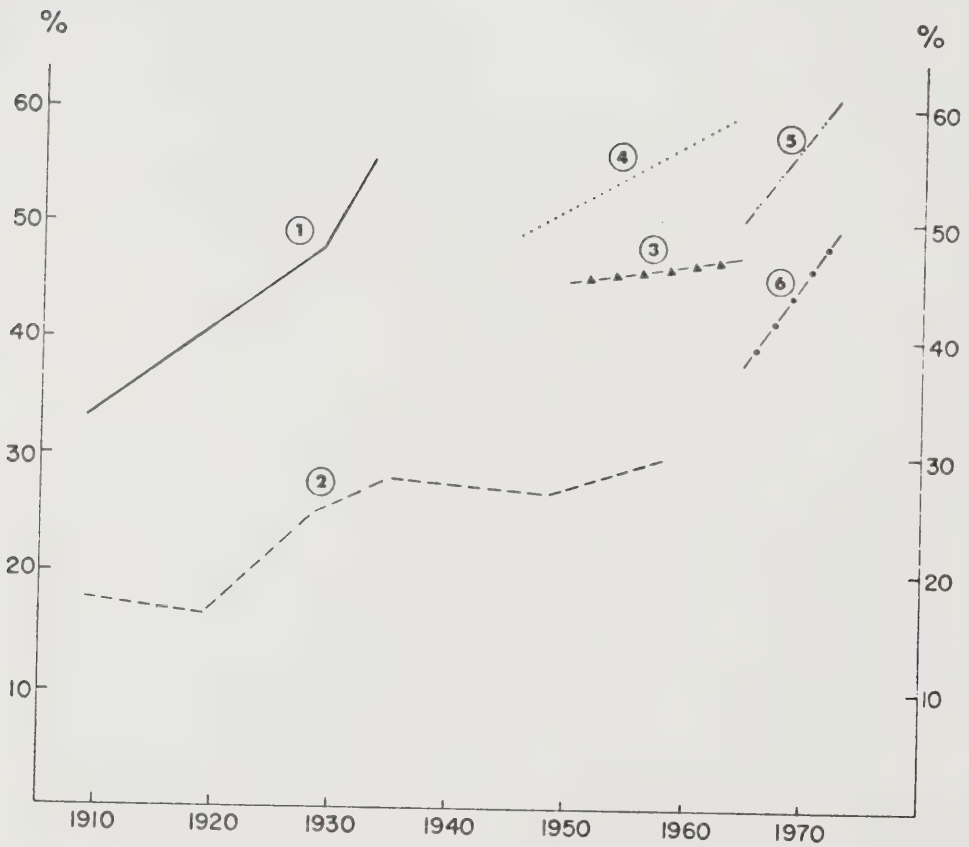
[74] Official concentration data are usually presented in terms of concentration ratios. For details regarding the structure of concentration ratios in different countries and the regularity of their publication refer to Marfels [38].

[75] For further analysis and discussion of these data refer to Blair [9, p.62].

Chart 62. Overall Concentration in Canada and in the United States: Six Individual Series



Source: Table 9.

Legend: Table 9.

Series 4-6 are different in character inasmuch as they refer to asset size data rather than to concentration ratios. However, these series allow for a direct comparison with Canadian data as can be seen in a synoptic way in Exhibit 33. Including insurance carriers, the share of the large corporations in total assets stood at 52% for Canada and at almost 60% for the United States in 1965. Consequently, inequality in the size distribution of assets was apparently significantly higher in the United States, *viz.* by 13%. However, it should be noted that the Canadian figure is understated since crown corporations (provincial power corporations!) are not included. During 1965/1971, the share of the large corporations in assets rose by 8.5 percentage points in the United States and by 7.3 percentage points in Canada. This meant a tendency for the inequality gap to widen by three percentage points, *i.e.* from 15% in 1965 to 18% in 1971 when excluding insurance carriers for 1965 in Canada for reasons of intertemporal comparability.

512. Aggregate Concentration in Manufacturing

Concentration data for the manufacturing division of the United States are available in unusual detail and, more importantly, for a long period of time. The series for the 100 largest corporations in terms of corporate assets covers almost every year from 1925-1973 (*vid.* Table 11).[76] During that period, the 100 largest manufacturing corporations increased their share by 11.5 percentage points to 47.6% in 1973. Similarly, the 200 largest corporations expanded their share in corporate assets from 1929 by almost 13 percentage points to 60.3% in 1973. Turning to the 50 largest corporations, this series is not as comprehensive as the two aforementioned ones and covers the 1947-1971 period only. However, it clearly indicates the rising trend by an increase of six percentage points to 37% in 1971. Comparing the three concentration ratios, the 50 largest held 31% of corporate assets in 1947 with the next 50 accounting for 8% and the next

[76] Asset data have been compiled on a consolidated basis, *i.e.* including subsidiaries, but several understatements of concentration levels remain [*cf.* 68, pp.174-175].

Exhibit 33. The Position of Corporations with Assets in Excess of $100 M: Total Assets, Share of Assets Held, and Inequality in the Corporate Size Distribution, United States and Canada, Selected Years

Year	United States			Canada					
	Assets		Inequality	Assets				Inequality	
	$B	Percent		$B		Percent			
1965	1,027.6	59.6	0.768	72.6	79.9[a]	50.4	52.2[a]	0.698	0.711[a]
1971	1,968.3	68.1	0.811	159.0	. .	57.7	. .	0.733	. .

a) Including Insurance Carriers (SIC 771, 772, 775, and 776).

Sources: Table 10 (United States); Tables 5-7 and n.36 (Canada).

100 for, again, 8%. In 1971, the corresponding ratios read 37%, 12%, and 13%, respectively. Chart 63 depicts the long-term trends for the 50 and 100 largest corporations in the United States.

For 1965-1973, Canadian concentration data have been added (*vid.* Exhibit 6). In spite of the fact that Canadian concentration data are understated it appears that asset concentration in Canada was higher both for the 50 largest and the 100 largest manufacturing corporations. In all of the three years observed, Canadian concentration levels for the 100 largest were higher than in the United States although the gap was narrowing, *viz.* from 4.7 percentage points in 1965 to 0.2 in 1968 to 0.1 in 1973. No such direct comparison is possible for the 50 largest; however, judging from Chart 63, a very similar trend seems to prevail, *i.e.* asset concentration is slightly higher in Canada with the gap narrowing again.

A more precise comparison is made possible with officially published value-added concentration data for the manufacturing sector [56; 57; 58; 66]. These statistics are more sophisticated than the data on asset concentration in every respect: first of all, their coverage is broader since not only corporations but *all* manufacturing companies regardless of the type of organization are included; next, value-added concentration data are presented for various measures of business activity, among them manufacturing value added; and finally, the tabulating unit is the 'enterprise' for Canadian data which includes all establishments under common majority control, *i.e.* ownership of more than 50% (*vid. supra*). The tabulating unit for U.S. data is the 'company' comprising all establishments under common control.[77] The concentration data from Exhibit 14 and Table 12 are plotted in Chart 64. Obviously, Canadian concentration levels in Manufacturing are significantly higher than in the counterpart sector of the United States. In fact, a sort of doubling of numbers prevails:

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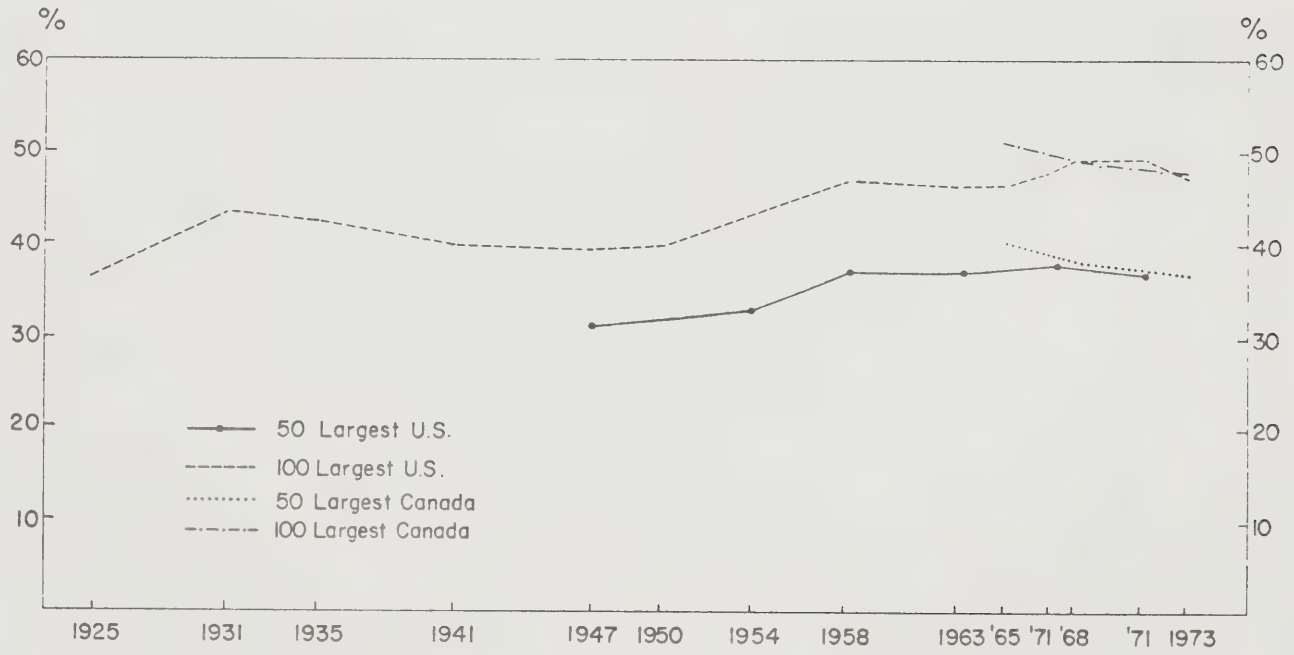
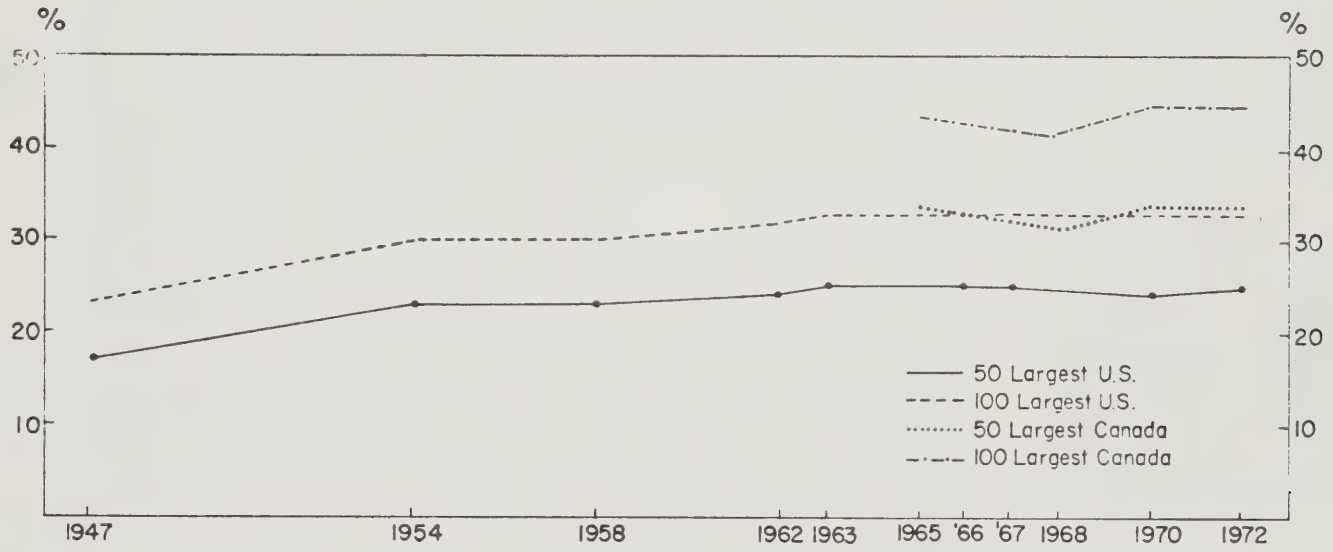
[77] Establishments were assigned to companies according to a system of 'acknowledged control' without specifying a percentage for years prior to 1972 [56, p.178]. According to a communication from Dr. E. A. Robinson from the U.S. Bureau of the Census, a clear definition of majority control was introduced in the company summary form from 1972 onwards.

Chart 63. Asset Concentration in the Manufacturing Sectors of the United States and Canada: 50 and 100 Largest Corporations, Selected Years



Sources: Exhibit 6; Table 11.

Chart 64. Value-Added Concentration in the Manufacturing Sectors of the United States and Canada: 50 and 100 Largest Enterprises, Selected Years



Sources: Exhibit 14; Table 12.

during the period 1965/1972, the 50 largest manufacturing enterprises in Canada accounted for as great a share of total manufacturing value added as did the 100 largest companies in the United States and, similarly, for the 100 largest in Canada and the 200 largest in the United States. More precisely, the 50 and 100 largest in the United States remained unchanged at 25% and 33% in 1963/1972, whereas the corresponding levels in Canada during 1965/1972 increased by 0.2 percentage points to 33.6% and by 1.3 percentage points to 44.9%; the latter share is still ahead of the 200 largest in the United States in 1972 by almost two percentage points.

513. Concentration in Manufacturing Industries

The comparison of concentration levels of Canadian manufacturing industries with counterpart industries in the United States has been a matter of long-standing interest. Rosenbluth found that for 1947 (U.S.)/ 1948 (Canada) in 50 of 56 comparable industries Canadian concentration levels were significantly higher than the ones in the United States[78] [47, p.335]. A cross-country comparison by the Department of Consumer and Corporate Affairs for Canadian concentration levels in 1965 and U.S. data for 1963 and 1966 revealed similar proportions, *viz.* of the 116 manufacturing industries in the sample, 98 were significantly more concentrated in Canada [12, p.49]. Rosenbluth has attributed this phenomenon of high concentration in Canada to the fact that Canadian industries have fewer firms than comparable industries in the United States, with the average firm size being on similar levels in the two countries [49, pp.82-85].

Comparison of 1972 concentration levels in Exhibit 34 definitely supports the previous findings of concentration being higher in Canada than in the United States. However, as can be seen from Chart 65 the spread between the two percentage distributions is not as marked as was to be expected, since for economy reasons all reported industries were

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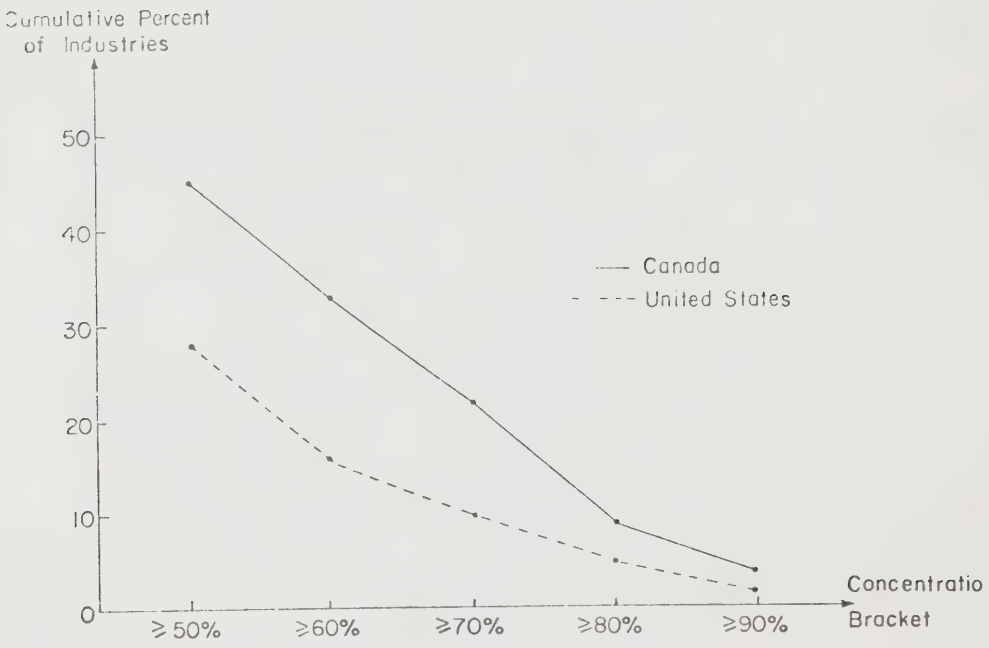
[78] By making allowance for separate regional markets and/or dependence from export trade for Canadian industries, the ratio was 30 out of 34 comparable industries [47, p.335].

Exhibit 34. Percent of Manufacturing Industries by Value-of-Shipment Concentration Brackets for the First Four Enterprises/ Companies, Canada and the United States, 1972

Concentration Bracket	Cumulative Percent of Industries	
	Canada	United States
90% or more	4	2
80% or more	9	5
70% or more	22	10
60% or more	33	16
50% or more	45	28
Total No. of Industries	155	439

Sources: Bock [11, p.49], reprinted by kind permission; Exhibit 19.

Chart 65. Percent of Manufacturing Industries by Value-of-Shipment Concentration Brackets for the First Four Enterprises/Companies, Canada and the United States, 1972



Source: Exhibit 34.

included and not the comparable ones only. Obviously, the large number of 439 reported--and, thus, narrower defined--manufacturing industries[79] in the United States *vs.* 155 in Canada tended to bias the previously observed proportions. Yet the fact that--percentage-wise--twice as many industries in Canada had top-4 concentration levels in each of the deciles beyond 60% is impressive enough.

An intertemporal comparison of concentration levels in U.S. manufacturing industries for 1947 and 1972 is provided in Exhibit 35. It appears that there was a decline in concentration for all reported industries: in 1947, 21% of all industries had top-4 concentration levels of 60% and more; by 1972, their number had reduced to 16%. For definitionally comparable industries, concentration levels had remained virtually unchanged. These tendencies may again serve as an indicator for potential post-war developments in Canada.

52. Inclusion of Other Countries

521. Aggregate Concentration in Manufacturing

As was mentioned earlier, the inclusion of countries other than the United States in an international comparison was governed by the availability of concentration data. The inclusion of only three more countries, *viz.* the F. R. of Germany, Japan, and the United Kingdom, in Exhibit 36 and Chart 66 means a rather heterogeneous set of data.[80] Thus, it seems

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[79] The total number of industries in Table 5 of the 1972 Concentration Report [66, pp.7-49] is 451 of which value-of-shipment concentration ratios were reported for 439 industries. The figures for Canada read 171 and 155, respectively (*vid. supra*).

[80] Concentration ratios for the F. R. of Germany and for the United Kingdom are 'private' estimates. Moreover, the ratios for the F. R. of Germany include gross turnover tax prior to 1968, and they are overstated relative to Canadian, U.K., and U.S. data inasmuch as they include both non-industrial shipments and shipments of foreign subsidiaries [*cf.* 42, pp.120-121]. For an interesting discussion of the differences in the definition of an enterprise in a Census in the United Kingdom and in North America on the one hand and in continental Europe on the other hand refer to Prais and Reid [45].

Exhibit 35. Percent of U.S. Manufacturing Industries by Value-of-Shipment Concentration Ratios for the First Four Companies, 1947 and 1972

Concentration Bracket	Cumulative Percent of Industries	
	1947	1972
Definitionally Comparable Industries		
90% or more	1	3
80% or more	7	6
70% or more	13	12
60% or more	20	20
50% or more	30	32
Total No. of Industries	146	146
All Reported Industries		
90% or more	2	2
80% or more	7	5
70% or more	13	10
60% or more	21	16
50% or more	33	28
Total No. of Industries	439	439

Source: Bock [11, p.49], reprinted by kind permission.

Exhibit 36. Aggregate Concentration in Various Countries: Share Accounted for by the 100 Largest Manufacturing Companies

Canada: Value Added

1965	1968	1970	1972
43.6	41.8	45.0	44.9

Federal Republic of Germany: Value of Shipments

1954	1962	1965	1971	1973
33.6	37.2	42.0	51.8	50.1

Japan: Share Capital (Non-Financial Corporations)[a]

1953	1958	1963	1964	1965	1966	1967	1968	1969
32.1	35.3	39.4	39.4	37.5	36.7	35.5	33.4	33.0

United Kingdom: Net Output

1949	1953	1958	1963	1968	1970
21.0	27.0	32.3	37.4	42.0	46.0

United States: Value Added

1947	1954	1958	1962	1963	1966	1967	1970	1972
23	30	30	32	33	33	33	33	33

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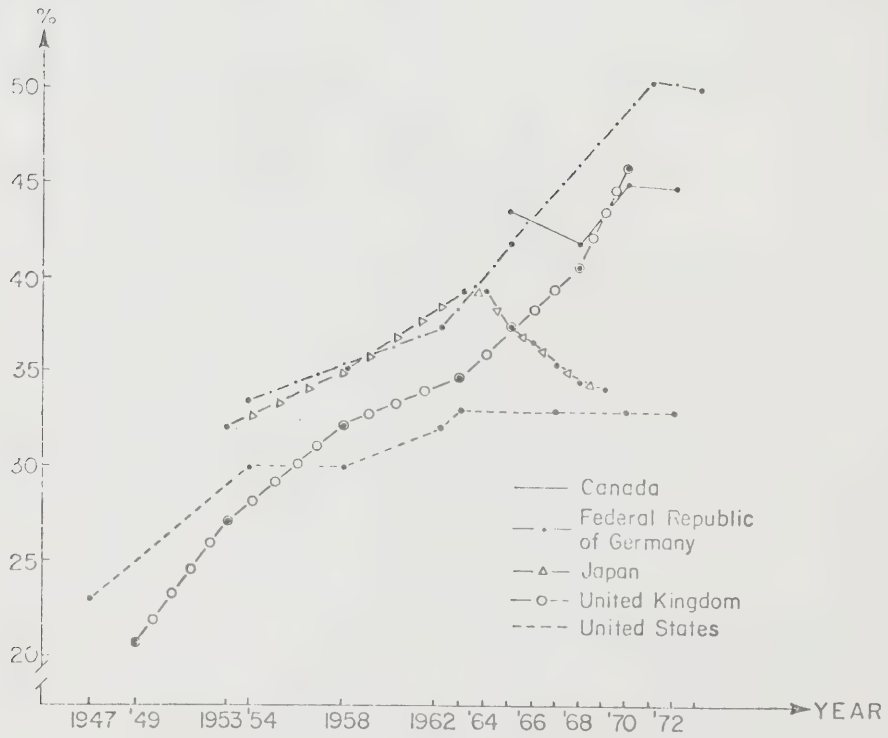
a) Classification of the top-100 non-financial corporations by division in 1969 was as follows: Manufacturing (62), Utilities (23), Trade (8), Construction (4), Fisheries (1), Mining (1), and Real Estate (1); 1963-1969 are fiscal years.

Sources: Canada: Statistics Canada [56, p.17; 57, p.15; 58].
F.R. of Germany: Müller and Hochreiter [42, p.117].
Japan: Japan [29, p.137].
United Kingdom: Aaranovich and Sawyer [1, p.117]; Prais [45].
United States: United States [66, Table 1].

Chart 66. Aggregate Concentration in Various Countries: Share Accounted for by the 100 Largest Manufacturing Companies



Source: Exhibit 36.

advisable to compare *trends* of aggregate concentration rather than actual levels. In this respect, it is interesting to note the rapid increase of the top-100 aggregate concentration in the United Kingdom and in the F. R. of Germany by almost 9 percentage points (1963/1970) and 8 percentage points (1962/1973), respectively. This compares with a very slight increase of 1.3 percentage points for Canada (1965/1972) and unchanged concentration in the United States (1963/1972). The decline of more than 6 percentage points for Japan during 1963/1969 has to be evaluated differently since it reflects overall concentration trends for all non-financial corporations.

522. Concentration in Selected Manufacturing Industries

Official concentration data for individual manufacturing industries have been published in a number of industries in the post-war period on a more or less regular basis.[81] In order to avoid the somewhat gargantuan task of a full-scale international comparison with concentration data adjusted for conceptual differences, a sample of nine Canadian manufacturing industries with *similarly* defined counterpart industries in a given foreign country was selected. They are: Slaughtering and Meat Processors, Breweries, Tobacco Products Mfrs., Rubber Tire and Tube Mfrs., Pulp and Paper Mills, Iron and Steel Mills, Motor Vehicle Mfrs., Cement Mfrs., and Petroleum Refining. These industries have the advantage of being relatively easily identifiable; moreover, they represent basically the largest Canadian manufacturing industries (*vid.* Exhibit 30). The only adjustment conducted was to have minimum estimates of the commonly used four-firm ratios calculated for countries that employ three-firm ratios instead[82] in order to obtain at least one common basis and to avoid a consistent downward bias.

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[81] Apart from Canada and the United States, concentration data for Australia, F. R. of Germany, France, Japan, Sweden, Switzerland, and the United Kingdom came to the author's attention.

[82] The countries are: F. R. of Germany, Japan, and Switzerland. To obtain minimum estimates, equal distribution of individual firms' shares was assumed to exist *between* two adjacent published concentration ratios. Unfortunately, this meant the exclusion of concentration data for the United Kingdom since it was felt that a minimum estimate 'backwards' from five-firm ratios (as published from 1963 onwards) would understate the 'true' four-firm ratio unduly.

The four-firm concentration ratios for the aforementioned nine industries[83] in Australia, Canada, the F. R. of Germany, France, Japan, Sweden, Switzerland, and the United States are presented in Exhibits 37-44. When ranking the countries by level of concentration for each of the nine industries, a *tentative* conclusion deserves specific mention: for the nine industries in the sample and excluding the United Kingdom, Canada assumes a clear lead in terms of the level of concentration among her major trading partners.[84]

This statement has to be weighed vis-à-vis the fact that the compared concentration ratios have not been adjusted for conceptual differences. Thus, it may serve only as an indication of the conditions that might prevail in a full-scale international comparison of concentration levels. However, it seems highly unlikely that a reversal of the rank order in the sense of Canada dropping significantly could be expected in such an analysis.

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[83] It should be noted that Japanese concentration ratios are commodity-based.

[84] For 1965 (Japan and United States: 1966, Australia: 1968/69), the sum of the ordinals divided by the number of industries is: Canada (2.2), Australia (3.0), Sweden (3.6), France (4.0), Japan (4.1), Switzerland (4.7), F. R. of Germany (5.8), and United States (5.9). Comparing concentration levels for the latest year available in each country, the respective figures read: Canada (2.3), Australia (2.9), Sweden (3.7), France (4.4), Japan (4.4), Switzerland (4.8), F. R. of Germany (5.0), and United States (5.9).

Exhibit 37. Turnover Concentration Ratios for the First Four Enterprises in Selected Manufacturing Industries of Australia, 1968-69 and 1972-73.

SIC	Industry	1968-69	1972-73
2111	Meat Products	31	30
2192	Beer	80	80
2210	Tobacco Products	100	100
2611	Pulp, Paper & Paperboard	90	100
2730	Petroleum Refining	70	72
2831	Cement	68	69
2912	Iron & Steel	..	..
3211	Motor Vehicles	88	88
3421	Rubber Tyres	87	85

Source: Australia [72, Table 3].

Exhibit 38. Value-of-Shipment Concentration Ratios for the First Four Enterprises in Selected Manufacturing Industries of Canada, 1965-1972

SIC	Industry	1965	1968	1970	1972
1011	Slaughtering and Meat Processors	58.0	55.4	53.4	53.9
1093	Breweries	94.5	94.8	94.0	96.5
1530	Tobacco Products Mfrs.	91.3	95.8	96.8	97.1
1630	Rubber Tire and Tube Mfrs.	87.3	x	x	x
2710	Pulp and Paper Mills	36.9	35.9	36.1	34.4
2910	Iron and Steel Mills	78.8	76.9	75.2	77.7
3230	Motor Vehicle Mfrs.	93.3	94.6	93.3	x
3520	Cement Mfrs.	76.7	69.2	79.3	83.7
3651	Petroleum Refining	84.8	78.1	79.0	73.7

Sources: Canada [12, Table A-1]; Statistics Canada [57, Table 2; 58].

Exhibit 39. Value-of-Shipment Concentration Ratios for the First Three (CR_3), First Four (CR_4)[a] and First Six (CR_6) Companies in Selected Manufacturing Industries of the Federal Republic of Germany, 1962-1974

SIC	Industry	1962			1965			1968			1970			1972			1973			1974		
		CR_3	CR_4[a]	CR_6	CR_3	CR_4[a]	CR_6	CR_3	CR_4[a]	CR_6	CR_3	CR_4[a]	CR_6	CR_3	CR_4[a]	CR_6	CR_3	CR_4[a]	CR_6	CR_3	CR_4[a]	CR_6
205	Petroleum Refining	56.4	63.3	77.0	61.2	66.9	78.2	48.1	54.8	68.1	49.4	56.0	69.2	48.0	54.7	68.1	47.5	54.5	68.3	49.3	55.5	73.4
2202	Cement	44.0	47.8	55.4	49.2	52.8	59.8	52.1	55.0	60.6	53.7	56.8	62.8	x	...	x	x	...	x	..	...	x
230	Iron and Steel	21.6	27.7	39.9	24.6	31.3	44.5	31.5	[illegible]	49.0	33.8	[illegible]	51..	[illegible]	[illegible]	[illegible]	34.7	41.0	53.5	36.7	42.7	54.8
264	Pulp and Paper	25.2	29.4	37.8	27.8	31.8	39.8	x	...	39.8	29.6	34.1	43.0	31.1	35.6	44.5	32.6	37.2	46.2	32.0	36.5	45.4
215	Rubber	37.4	40.9	47.9	35.1	38.9	46.3	35.1	39.6	48.4	33.9	...	x	33.4	38.3	48.0	33.8	38.4	47.4	32.0	36.9	46.6
244	Motor Vehicles	55.6	60.4	69.8	55.6	60.9	71.3	59.4	64.2	73.8	53.8	59.2	70.0	54.8	60.8	72.7	53.0	59.2	71.4	54.1	59.7	70.9
29141	Meat Processing	42.6	44.1	46.9	36.7	38.4	41.4	37.2	39.2	43.0	34.3	36.6	41.0	33.1	35.9	41.4	33.9	36.6	42.0	32.3	34.9	40.1
293	Breweries	6.8	8.5	11.7	7.5	9.3	12.8	7.7	9.7	13.5	9.1	11.1	15.1	9.5	11.8	16.3	11.5	13.7	18.1	9.8	12.2	16.9
28077	Cigarettes	81.7	...	x	85.5	...	x	x	...	x	x	...	x	80.6	...	x	78.1	...	x	77.0	...	x

a) Minimum estimates.

Sources: F.R. of Germany [21, pp. 130-137; 22, pp. 567-568 & 578-598].

Exhibit 40. Value-of-Shipment Concentration Ratios for the First Four Companies in Selected Manufacturing Industries of France, 1961-1969

SIC	Industry	1961	1963	1965	1967	1969
100	Petroleum Refining	62.2	61.9	60.7	60.5	63.0
163	Steel	..	76.2	75.7	86.9	85.5
261	Motor Vehicles	..	75.7	74.3	78.5	76.4
325	Cement	..	56.1	56.5	61.3	61.7
372	Tires	..	84.8	90.5	94.3	93.8
383	Tobacco Products[a]	..	..	99.3	>80.0	>80.0
425	Breweries	..	24.7	34.7	34.3	44.2
442	Meatpacking	..	28.5	27.5	13.8	26.8

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a) Private sector only.

Source: Jenny and Weber [32, pp.60, 67-83].

Exhibit 41. Output Concentration Ratios for the First Three (CR_3), First Four (CR_4)[a] and the First Five Companies (CR_5) for Selected Commodities in the Manufacturing Sector of Japan, 1949-1974[b]

Industry	1949			1958			1966			1974		
	CR_3	CR_4[a]	CR_5	CR_3	CR_4	CR_5	CR_3	CR_4[a]	CR_5	CR_3	CR_4[a]	CR_5
Petroleum (Refined)	97.8	98.4	99.6	37.8	48.8	58.3	36.0	44.0	51.9	38.3	44.8	51.3
Steel	58.3	61.7	68.3	52.4	60.3	66.1	43.7	50.7	64.7	59.4	69.1	78.8
Tires	89.8	93.2	100.0	77.6	87.7	94.3	77.2	80.9	88.1	79.4	84.8	90.1
Automobiles	98.8	100.0	(100.0)	76.2	86.9	94.0	79.2	82.9	90.1	84.3	90.4	96.6
Beer	100.0	(100.0)	(100.0)	98.1	100.0	(100.0)	96.0	97.1	99.3	93.9	96.6	99.3
Cement	52.3	58.5	70.7	48.6	56.3	63.6	43.6	48.7	58.7	36.6	47.6	58.6
Paper Pulp	43.4	50.3	57.3	27.3	32.9	38.4	32.9	39.2	45.5	35.6	43.8	52.0

a) Minimum estimates, except for 1958.
b) For a detailed analysis of the structure of Japanese concentration data refer to Edwards [20].

Sources: Japan [28; 30; 31]; figures for 1974 were communicated direct by the Fair Trade Commission, Tokyo.

Exhibit 42. Value-Added Concentration Ratios for the First Four Companies (CR_4) in Selected Manufacturing Industries of Sweden, 1965

SIC	Industry	CR_4
1201	Steel	52
1216	Automobiles	84
1355	Cement	77[a]
1555	Pulp and Paper	42
1715	Meatpacking	36
1852	Breweries	66
2057	Tires	79

a) CR_1.

Source: Carling [17, pp.86-94].

Exhibit 43. Employment Concentration Ratios for the First Three (CR_3) and the First Five Companies (CR_5) in Selected Manufacturing Industries of Switzerland, 1965

SIC	Industry	CR_3	CR_4[a]	CR_5
2001	Slaughtering	94	96	98
2120	Breweries	27	34	40
2202	Cigarettes	59	72	85
2701	Pulp and Paper	30	37	44
3001	Rubber	64	67	70
3201	Petroleum Refining	91	94	97
3303	Cement	36	43	49
3401	Iron and Steel	95	97	98
3524	Motor Vehicles and Tractors	38	43	47

a) Minimum estimates.

Source: Switzerland [65].

Exhibit 44. Value-of-Shipment Concentration Ratios for the First Four Companies in Selected Manufacturing Industries of the United States, 1947-1972

SIC	Industry	1947	1954	1958	1963	1966	1967	1970	1972
2011	Meatpacking	41	39	34	31	27	26	23	22
2082	Malt Beverages	21	27	28	34	39	40	46	52
2111	Cigarettes	90	82	79	80	81	81	84	84
2621	Paper Mills	..	..	..	26	24	26	26	24
2911	Petroleum Refining	37	33	32	34	32	33	33	31
3011	Tires and Inner Tubes	..	..	..	70	71	70	72	73
3241	Cement	30	31	32	29	30	29	27	26
3312	Blast Furnaces and Steel Mills	50	55	53	48	49	48	47	45
3711	Motor Vehicles and Car Bodies	..	..	..	..	..	92	91	93

Source: United States [66, Table 5].

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Table 1. Foreign Trade as Percentage of Gross National Product of Four Countries, 1960-1972[a]

Country	1960	1970	1972
Canada	15.7	18.0	21.2
Federal Republic of Germany	14.8	17.1	16.9
Japan	9.9	10.9	8.7
United States	3.6	4.2	4.6

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a) Average one-way trade (i.e. one half of the sum of imports and exports), divided by GNP.

Sources: Frank and Hirono [25, pp.11 and 37]; Canada [15, p.9; 13, pp.115 and 188-189]; Statistics Canada [62, p.39].

Table 2. Estimates of the Importance of the Corporate Sector in Various Divisions of the Canadian Economy, 1968 and 1973[a]

Division	Year	Corporations as Percent of All Businesses	
		Number	Total Income
Agriculture/Forestry/ Fishing	1968	1.7	45.7
	1973	2.6	48.9
Manufacturing	1968	59.9	99.8
	1973	65.1	99.9
Construction	1968	24.2	96.4
	1973	28.1	96.0
Utilities	1968	16.4	98.1
	1973	17.9	98.4
Trade	1968	26.6	98.1
	1973	33.0	98.4
Finance[b]	1968	85.3	99.1
	1973	90.8	99.3
Services[c]	1968	21.0	91.7
	1973	25.0	92.7

a) The Mining Division was omitted since no data on unincorporated businesses were available.
b) Excluding Investors and Property Owners for unincorporated businesses.
c) Consisting of Operators of Recreational, Business and Other Services for unincorporated businesses.

Sources: Canada [14, 1970 e., pp. 38-45; 14, 1975 e., pp. 42-49; 60, 1969 e., pp. 142-156]; figures for 1973 were communicated direct by the Business Finance Division of Statistics Canada.

Table 3. Industry Groupings According to the Standard Industrial Classification Code

Industry	SIC Code	Aggregation of Groupings for Measuring Aggregate Concentration	Aggregation of Groupings for Measuring Overall Concentration
AGRICULTURE/FORESTRY/FISHING		011-047	
Agriculture	011-021		
Forestry	031, 039		
Fishing and Trapping	041, 045, 047		
MINING		051-099	
MANUFACTURING		101-399	
CONSTRUCTION		404-421	
UTILITIES		501-579	
Transportation	501-519		
Storage	524, 527		
Communication	543-548		
Other Utilities	572-579		
TRADE		602-699	
Wholesale Trade	602-629		
Retail Trade	631-699		
FINANCE[a]		711-793	
Deposit Accepting Inst.	711-715		
Credit Agencies	721-729		
Investment Companies	741, 751-756		
Insurance, Real Estate and Other Agencies	769, 781-793		
SERVICES		801-899	
Community and Public Services	801-809, 821-828, 831		
Services to Bus. Management	861-869		
Misc. Services	801-859, 871-899		
ALL NON-FINANCIAL INDUSTRIES			011-699, 801-899

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a) Excluding Credit Unions (SIC 716), Caisses Populaires (SIC 717), Insurance Carriers (SIC 771, 772, 775 and 776), and Foreign Business Corporations (SIC 765).

Source: Statistics Canada [60, 1970 e., pp.274-281].

Table 4. Selected Statistics for Corporations in Various Divisions of the Canadian Economy, 1965-1973

Year	No. of Corporations	Percent of All Industries	Percent of All Non-Fin. Industries	Assets $M	Percent of All Industries	Percent of All Non-Fin. Industries	Sales $M	Percent of All Industries	Percent of All Non-Fin. Industries
AGRICULTURE/FORESTRY/FISHING									
1965	4,747	2.8	4.0	842	0.6	1.1	656	0.7	0.8
1966	4,808	2.6	4.0	806	0.5	0.9	712	0.7	0.7
1967	4,933	2.7	4.0	1,014	0.5	0.9	785	0.7	0.7
1968	5,393	2.8	4.2	1,138	0.5	1.0	858	0.7	0.7
1969	5,794	2.8	4.2	1,340	0.6	1.0	982	0.7	0.8
1970	6,637	3.0	4.5	1,515	0.6	1.1	1,139	0.8	0.8
1971	7,024	3.0	4.6	1,734	0.6	1.2	1,275	0.8	0.9
1972	7,625	3.2	4.6	1,860	0.6	1.1	1,472	0.8	0.9
1973	8,513	3.3	4.7	2,225	0.6	1.2	1,975	0.9	1.0
MINING									
1965	3,854	2.3	3.2	8,575	5.9	11.0	2,783	3.1	3.3
1966	3,216	1.8	2.7	9,751	6.2	11.5	3,194	3.2	3.4
1967	3,467	1.9	2.8	10,550	5.6	9.7	3,653	3.2	3.4
1968	3,663	1.9	2.8	11,200	5.4	9.6	3,924	3.2	3.4
1969	3,710	1.8	2.7	13,909	6.0	10.9	4,900	3.6	3.9
1970	3,773	1.7	2.6	15,281	6.0	11.1	5,731	4.0	4.3
1971	3,739	1.6	2.4	17,367	6.3	11.6	5,722	3.6	3.9
1972	3,721	1.6	2.3	18,216	5.9	11.1	6,326	3.5	3.8
1973	3,924	1.5	2.2	20,503	5.7	11.2	9,072	4.3	4.7
MANUFACTURING									
1965	21,505	12.8	18.1	32,876	22.7	42.4	37,880	42.1	44.4
1966	20,934	11.5	17.3	36,523	23.3	42.9	41,155	40.7	43.3
1967	20,709	11.3	16.9	40,196	21.4	37.0	44,569	39.0	41.5
1968	20,856	10.8	16.1	42,980	20.8	36.8	48,109	38.7	41.4
1969	21,085	10.2	15.3	44,573	19.4	34.9	52,568	38.6	41.6
1970	22,081	9.9	15.0	47,325	18.9	34.5	53,557	37.1	40.1
1971	21,958	9.5	14.4	49,677	18.0	33.2	58,719	37.2	40.1
1972	23,021	9.7	14.0	53,346	17.2	32.6	65,421	36.3	39.5
1973	24,218	9.4	13.4	60,157	16.9	32.7	77,079	36.4	39.7

Table 4 continued

Year	No. of Corporations	Percent of All Industries	Percent of All Non-Fin. Industries	Assets $M	Percent of All Industries	Percent of All Non-Fin. Industries	Sales $M	Percent of All Industries	Percent of All Non-Fin. Industries
CONSTRUCTION									
1965	15,331	9.1	12.9	3,591	2.5	4.6	5,900	6.5	6.9
1966	14,857	8.2	12.3	4,350	2.8	5.1	7,388	7.3	7.8
1967	16,189	8.9	13.2	4,846	2.6	4.5	8,203	7.2	7.6
1968	17,694	9.2	13.7	5,290	2.6	4.5	8,300	6.7	7.1
1969	19,203	9.3	13.9	6,111	2.6	4.8	8,737	6.4	6.9
1970	19,974	9.0	13.6	6,590	2.7	4.8	9,112	6.3	6.8
1971	21,290	9.2	13.9	7,334	2.7	4.9	9,979	6.3	6.8
1972	22,998	9.7	14.0	8,151	2.6	5.0	11,228	6.2	6.8
1973	26,086	10.1	14.5	9,275	2.6	5.0	12,850	6.1	6.6
UTILITIES									
1965	7,111	4.2	6.0	15,784	10.9	20.3	5,737	6.4	6.7
1966	6,965	3.8	5.8	16,648	10.6	19.6	6,327	6.3	6.7
1967	7,274	4.0	5.9	31,842	16.9	29.3	8,941	7.8	8.3
1968	7,556	3.9	5.8	33,920	16.4	29.0	9,478	7.6	8.1
1969	8,133	3.9	5.9	36,746	16.0	28.7	10,474	7.7	8.3
1970	8,825	4.0	6.0	39,517	15.7	28.8	11,649	8.1	8.7
1971	9,052	3.9	5.9	43,131	15.6	28.9	12,653	8.0	8.6
1972	9,831	4.1	6.0	47,165	15.2	28.9	14,321	7.9	8.6
1973	10,756	4.2	6.0	51,682	14.5	28.1	16,172	7.6	8.3
TRADE									
1965	44,725	26.6	37.7	12,581	8.7	16.2	29,405	32.6	34.5
1966	44,321	24.4	36.7	13,297	8.5	15.6	32,704	32.4	34.4
1967	46,619	25.5	38.1	15,807	8.4	14.6	37,151	32.5	34.4
1968	49,358	25.6	38.1	17,556	8.5	15.0	41,014	33.0	35.3
1969	53,491	25.8	38.7	19,470	8.5	15.2	43,597	32.0	34.5
1970	57,169	25.7	38.9	20,745	8.3	15.1	46,648	32.3	34.9
1971	58,911	25.4	38.6	23,239	8.4	15.5	51,511	32.6	35.2
1972	62,738	26.5	38.1	25,940	8.4	15.9	59,259	32.9	35.8
1973	67,960	26.3	37.8	29,647	8.3	16.1	68,377	32.3	35.2

Table 4 continued

Year	No. of Corporations	Percent of All Industries	Percent of All Non-Fin. Industries	Assets $M	Percent of All Industries	Percent of All Non-Fin. Industries	Sales $M	Percent of All Industries	Percent of All Non-Fin. Industries
FINANCE									
1965	49,324	29.4		67,297	46.4		4,840	5.4	
1966	60,666	33.4		71,894	45.8		5,999	5.9	
1967	60,329	33.0		79,382	42.2		6,868	6.0	
1968	63,278	32.8		89,762	43.4		7,950	6.4	
1969	69,189	33.4		102,343	44.4		9,647	7.1	
1970	75,440	33.9		113,638	45.3		10,858	7.5	
1971	78,702	34.0		126,460	45.8		11,557	7.3	
1972	71,966	30.4		146,949	47.3		14,424	8.0	
1973	78,507	30.4		172,472	48.4		17,536	8.3	
SERVICES									
1965	21,294	12.7	18.0	3,346	2.3	4.3	2,864	3.2	3.4
1966	25,583	14.1	21.2	3,702	2.4	4.3	3,518	3.5	3.7
1967	23,184	12.7	18.9	4,240	2.3	3.9	4,157	3.6	3.9
1968	24,861	12.9	19.2	4,784	2.3	4.1	4,574	3.7	3.9
1969	26,760	12.9	19.4	5,715	2.5	4.5	5,195	3.8	4.1
1970	28,664	12.9	19.5	6,221	2.5	4.5	5,810	4.0	4.3
1971	30,785	13.3	20.1	6,936	2.5	4.6	6,466	4.1	4.4
1972	34,544	14.6	21.0	8,716	2.8	5.3	7,705	4.3	4.6
1973	38,540	14.9	21.4	10,256	2.9	5.6	8,738	4.1	4.5

Year	No. of Corporations	Assets $M	Sales $M	Year	No. of Corporations	Assets $M	Sales $M
ALL INDUSTRIES				ALL NON-FINANCIAL INDUSTRIES			
1965	167,892	144,895	90,067	1965	118,568	77,598	85,227
1966	181,350	156,969	100,998	1966	120,684	85,075	94,999
1967	182,704	187,877	114,327	1967	122,375	108,495	107,459
1968	192,659	206,630	124,207	1968	129,381	116,868	116,257
1969	207,365	230,207	136,100	1969	138,176	127,864	126,453
1970	222,563	250,832	144,504	1970	147,123	137,193	133,646
1971	231,461	275,878	157,881	1971	152,759	149,418	146,324
1972	236,444	310,344	180,156	1972	164,478	163,394	165,732
1973	258,504	356,217	211,800	1973	179,997	183,745	194,264

Source: Statistics Canada [61].

Table 5. Selected Statistics for Various Divisions of the Canadian Economy by Asset Size of Corporations, 1968-1973

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Average Assets $M	Sales $M	Sales Percent
AGRICULTURE/FORESTRY/FISHING								
Under 1								
	1968	5,303	98.3	763.7	68.4	0.14	650.8	77.8
	1969	5,685	98.1	877.3	66.7	0.15	780.2	79.2
	1970	6,501	98.0	1,017.2	68.9	0.16	833.9	76.5
	1971	6,866	97.8	1,088.5	68.0	0.16	906.4	75.2
	1972	7,425	97.4	1,310.0	70.9	0.18	1,054.0	72.1
	1973	8,265	97.1	1,527.0	69.0	0.18	1,324.0	67.4
1-10								
	1968	84	1.5	182.6	16.4	2.2	151.4	18.1
	1969	102	1.8	240.8	18.3	2.4	163.2	16.6
	1970	130	2.0	269.0	18.2	2.1	208.3	19.1
	1971	151	2.1	323.5	20.2	2.1	260.7	21.6
	1972	197	2.6	416.0	22.5	2.1	372.0	25.4
	1973	245	2.9	555.0	25.1	2.3	580.0	29.5
10-100								
	1968	5	0.1	169.7	15.2	33.9	34.1	4.1
	1969	5	0.1	196.3	14.9	39.3	41.1	4.2
	1970	5	0.1	191.0	12.9	38.2	47.2	4.3
	1971	5	0.1	189.3	11.8	37.9	37.9	3.1
	1972	3	--	122.0	6.6	40.7	36.0	2.5
	1973	3	--	130.0	5.9	43.3	59.0	3.0
100 and over								
	1968	-	-	-	-	-	-	-
	1969	-	-	-	-	-	-	-
	1970	-	-	-	-	-	-	-
	1971	-	-	-	-	-	-	-
	1972	-	-	-	-	-	-	-
	1973	-	-	-	-	-	-	-
Total								
	1968	5,392	100.0	1,116.0	100.0	0.21	836.1	100.0
	1969	5,792	100.0	1,314.4	100.0	0.23	984.5	100.0
	1970	6,636	100.0	1,477.2	100.0	0.22	1,089.4	100.0
	1971	7,022	100.0	1,601.3	100.0	0.23	1,205.0	100.0
	1972	7,625	100.0	1,848.0	100.0	0.24	1,462.0	100.0
	1973	8,513	100.0	2,212.0	100.0	0.26	1,963.0	100.0

Table 5 continued

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Average Assets $M	Sales $M	Sales Percent
MINING								
Under 1								
	1968	2,974	81.2	561.4	4.4	0.19	232.6	4.3
	1969	2,951	79.6	615.1	4.4	0.21	230.8	4.8
	1970	2,966	78.6	615.5	4.0	0.21	238.1	4.2
	1971	2,928	78.3	627.1	3.6	0.21	272.1	4.8
	1972	2,905	78.1	635.0	3.5	0.22	283.0	4.5
	1973	3,084	78.6	625.0	3.0	0.20	300.0	3.3
1-10								
	1968	523	14.3	1,521.7	11.8	2.9	565.8	10.5
	1969	582	15.7	1,653.0	11.9	2.8	522.0	11.0
	1970	617	16.3	1,746.5	11.5	2.8	532.8	9.4
	1971	612	16.4	1,824.0	10.5	3.0	532.4	9.3
	1972	617	16.6	1,873.0	10.3	3.0	539.0	8.6
	1973	622	15.8	1,915.0	9.3	3.1	636.0	7.0
10-100								
	1968	140	3.8	4,100.3	31.8	29.3	1,167.6	21.7
	1969	146	3.9	4,387.5	31.6	30.0	1,295.9	27.2
	1970	159	4.2	4,942.5	32.4	31.1	1,386.3	24.5
	1971	166	4.4	5,384.1	31.0	32.4	1,363.8	23.9
	1972	164	4.4	5,358.0	29.4	32.7	1,524.0	24.3
	1973	177	4.5	5,608.0	27.3	31.7	2,248.0	24.9
100 and over								
	1968	26	0.7	6,690.3	52.0	257.3	3,410.9	63.4
	1969	30	0.8	7,203.7	52.0	240.1	2,716.4	57.0
	1970	30	0.8	7,937.8	52.1	264.6	3,496.6	61.8
	1971	34	0.9	9,526.3	54.9	280.2	3,528.8	61.9
	1972	35	0.9	10,347.0	56.8	295.6	3,928.0	62.6
	1973	41	1.0	12,351.0	60.2	301.2	5,853.0	64.8
Total								
	1968	3,663	100.0	12,873.7	100.0	3.5	5,376.9	100.0
	1969	3,709	100.0	13,859.2	100.0	3.7	4,765.0	100.0
	1970	3,772	100.0	15,242.4	100.0	4.0	5,655.5	100.0
	1971	3,740	100.0	17,361.4	100.0	4.6	5,697.0	100.0
	1972	3,721	100.0	18,213.0	100.0	4.9	6,274.0	100.0
	1973	3,924	100.0	20,499.0	100.0	5.2	9,037.0	100.0

Table 5 continued

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Average Assets $M	Sales $M	Sales Percent
MANUFACTURING								
Under 1								
	1968	17,729	85.4	3,456.0	8.6	0.19	6,554.1	14.5
	1969	17,668	84.1	3,669.7	8.3	0.21	7,136.7	13.9
	1970	18,506	83.8	3,761.2	8.0	0.20	7,253.6	13.6
	1971	18,280	83.1	3,980.6	7.7	0.21	7,376.0	12.6
	1972	19,091	82.5	4,038.0	7.6	0.21	7,719.0	12.0
	1973	19,949	82.4	4,116.0	6.8	0.21	7,895.0	10.3
1-10								
	1968	2,566	12.4	7,279.4	18.1	2.8	11,107.6	24.6
	1969	2,825	13.4	8,119.9	18.4	2.9	12,306.5	23.9
	1970	3,027	13.7	8,801.5	18.6	2.9	13,170.8	24.6
	1971	3,145	14.3	9,169.2	18.3	2.9	14,047.2	24.0
	1972	3,306	14.4	9,524.0	17.9	2.9	15,015.0	23.4
	1973	3,550	14.7	10,287.0	17.1	2.9	16,872.0	21.9
10-100								
	1968	408	2.0	12,545.4	31.3	30.7	12,860.9	28.5
	1969	448	2.1	13,543.0	30.7	30.2	14,450.8	28.1
	1970	477	2.2	14,207.6	30.0	29.5	14,582.8	27.3
	1971	490	2.2	14,248.3	28.4	29.1	15,368.8	26.3
	1972	535	2.3	15,114.0	28.3	28.2	16,716.0	26.1
	1973	621	2.6	17,216.0	28.6	27.7	22,394.0	29.1
100 and over								
	1968	63	0.3	16,831.9	42.0	267.2	14,551.8	32.3
	1969	67	0.3	18,816.8	42.6	280.8	17,559.9	34.1
	1970	74	0.2	20,498.8	43.4	277.0	18,430.6	34.5
	1971	83	0.4	22,862.1	45.6	275.4	21,720.5	37.1
	1972	89	0.4	24,668.0	46.2	277.2	24,698.0	38.5
	1973	98	0.4	28,536.0	47.4	291.2	29,797.0	38.7
Total								
	1968	20,766	100.0	40,112.7	100.0	1.9	45,074.5	100.0
	1969	21,008	100.0	44,149.6	100.0	2.1	51,493.9	100.0
	1970	22,084	100.0	47,269.2	100.0	2.1	53,437.8	100.0
	1971	21,998	100.0	50,170.0	100.0	2.3	58,512.5	100.0
	1972	23,021	100.0	53,344.0	100.0	2.3	64,148.0	100.0
	1973	24,218	100.0	60,155.0	100.0	2.5	76,958.0	100.0

Table 5 continued

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Average Assets $M	Sales $M	Sales Percent
CONSTRUCTION								
Under 1								
	1968	16,966	95.9	2,252.5	40.4	0.13	4,176.0	54.3
	1969	18,363	95.6	2,551.5	42.3	0.14	4,303.6	54.1
	1970	19,072	95.5	2,581.7	39.3	0.13	4,671.7	52.8
	1971	20,251	95.1	2,798.2	38.1	0.14	5,088.2	51.9
	1972	21,834	94.9	3,062.0	37.6	0.14	5,878.0	53.4
	1973	24,754	94.9	3,777.0	36.4	0.14	6,712.0	53.3
1-10								
	1968	665	3.8	1,548.6	27.8	2.3	2,181.7	28.4
	1969	763	4.0	1,787.7	29.6	2.3	2,183.6	27.4
	1970	818	4.1	1,978.2	30.1	2.4	2,513.4	28.4
	1971	954	4.5	2,272.1	30.9	2.4	2,981.1	30.4
	1972	1,076	4.7	2,611.0	32.0	2.4	3,435.0	31.2
	1973	1,239	4.7	3,019.0	32.6	2.4	3,895.0	30.9
10-100								
	1968	62	0.3	1,650.0[a]	29.6	26.6	1,310.0[a]	17.0
	1969	76	0.4	1,691.8	28.1	22.3	1,446.9	18.4
	1970	82	0.4	1,760.0[a]	26.8	21.5	1,630.0[a]	18.4
	1971	86	0.4	1,925.0[a]	26.2	22.4	1,605.0[a]	16.4
	1972	84	0.4	2,020.0[a]	24.8	24.0	1,490.0[a]	13.5
	1973	90	0.3	2,535.0[a]	27.3	28.2	1,830.0[a]	14.5
100 and over								
	1968	1	--	120.0[a]	2.1	120.0	20.0[a]	0.3
	1969	-	-	-	-	-	-	-
	1970	2	--	255.0[a]	3.9	127.5	40.0[a]	0.4
	1971	2	--	355.0[a]	4.8	177.5	135.0[a]	1.4
	1972	3	--	460.0[a]	5.6	153.3	200.0[a]	1.8
	1973	2	--	350.0[a]	3.8	175.0	150.0[a]	1.2
Total[b]								
	1968	17,694	100.0	5,574.4	100.0	0.30	7,690.6	100.0
	1969	19,203	100.0	6,031.0	100.0	0.32	7,954.8	100.0
	1970	19,974	100.0	6,574.3	100.0	0.33	8,855.7	100.0
	1971	21,293	100.0	7,349.8	100.0	0.34	9,809.9	100.0
	1972	22,997	100.0	8,148.0	100.0	0.35	10,998.0	100.0
	1973	26,085	100.0	9,272.0	100.0	0.35	12,591.0	100.0

Table 5 continued

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Average Assets $M	Sales $M	Sales Percent
UTILITIES								
Under 1								
	1968	6,723	92.5	867.8	4.6	0.13	1,167.7	16.7
	1969	7,241	92.4	918.3	4.5	0.13	1,321.2	17.3
	1970	8,049	91.2	1,078.6	2.7	0.13	1,493.4	13.1
	1971	8,224	90.8	1,147.3	2.7	0.14	1,534.0	12.4
	1972	8,935	90.9	1,250.0	2.6	0.14	1,816.0	13.0
	1973	9,820	91.3	1,386.0	2.7	0.14	1,951.0	12.3
1-10								
	1968	435	6.0	1,195.0	6.3	2.7	1,181.5	16.9
	1969	480	6.1	1,368.7	6.7	2.8	1,221.6	16.0
	1970	594	6.7	1,740.8	4.4	2.9	1,520.5	13.4
	1971	655	7.2	1,896.2	4.4	2.9	1,623.2	13.1
	1972	700	7.1	2,058.0	4.4	2.9	1,754.0	12.5
	1973	735	6.8	2,196.0	4.2	3.0	1,966.0	12.4
10-100								
	1968	85	1.2	2,548.3	13.4	30.0	1,027.0	14.7
	1969	94	1.2	2,676.9	13.0	28.5	1,071.5	14.0
	1970	135	1.5	4,026.9	10.2	29.8	1,705.9	15.0
	1971	137	1.9	4,117.4	9.7	30.0	1,878.6	15.1
	1972	148	1.5	4,689.0	9.9	31.7	2,110.0	15.1
	1973	149	1.4	4,467.0	8.6	30.0	2,400.0	15.2
100 and over								
	1968	22	0.3	14,368.5	75.7	653.1	3,613.9	51.7
	1969	24	0.3	15,529.2	75.8	647.0	4,041.0	52.8
	1970	44	0.5	32,652.8	82.7	742.1	6,639.0	58.4
	1971	46	0.5	35,413.8	83.2	769.8	7,369.0	59.4
	1972	47	0.5	39,165.0	83.0	833.3	8,290.0	59.3
	1973	52	0.5	43,630.0	84.4	839.0	9,482.0	60.0
Total								
	1968	7,265	100.0	18,979.7	100.0	2.6	6,990.1	100.0
	1969	7,839	100.0	20,493.1	100.0	2.6	7,655.2	100.0
	1970	8,822	100.0	39,499.1	100.0	4.4	11,358.8	100.0
	1971	9,062	100.0	42,574.7	100.0	4.7	12,404.8	100.0
	1972	9,830	100.0	47,162.0	100.0	4.8	13,970.0	100.0
	1973	10,756	100.0	51,679.0	100.0	4.8	15,799.0	100.0

Table 5 continued

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Average Assets $M	Sales $M	Sales Percent
TRADE								
Under 1								
	1968	47,199	95.7	6,414.7	38.4	0.14	16,829.4	43.7
	1969	51,098	95.6	6,974.6	39.1	0.14	18,153.9	44.1
	1970	54,662	95.6	7,346.5	35.7	0.13	18,886.9	41.2
	1971	56,086	95.1	7,735.9	33.5	0.14	20,025.9	39.3
	1972	59,477	94.8	8,261.0	31.7	0.14	22,136.0	37.7
	1973	64,252	94.5	9,298.0	31.4	0.14	23,185.0	34.1
1-10								
	1968	1,945	3.9	4,668.6	27.9	2.4	10,825.2	28.1
	1969	2,166	4.0	5,231.8	29.3	2.4	11,850.5	28.8
	1970	2,326	4.1	5,653.3	27.5	2.4	12,841.4	28.0
	1971	2,654	4.5	6,338.2	27.4	2.4	14,632.8	28.7
	1972	3,015	4.8	7,688.0	29.5	2.6	17,104.0	29.1
	1973	3,414	5.0	8,417.0	28.4	2.5	20,295.0	29.8
10-100								
	1968	135	0.3	3,177.7	19.0	23.5	6,180.2	16.0
	1969	147	0.3	3,553.2	19.9	24.2	7,130.5	17.3
	1970	168	0.3	4,107.2	20.0	24.4	8,468.8	18.5
	1971	192	0.3	5,012.9	21.7	26.1	9,648.9	18.9
	1972	227	0.4	5,719.0	22.0	25.2	11,410.0	19.4
	1973	270	0.4	6,762.0	22.8	25.0	14,564.0	21.4
100 and over								
	1968	16	--	2,457.7	14.7	153.6	4,707.1	12.2
	1969	13	--	2,068.8	11.6	159.1	3,982.1	9.7
	1970	15	--	3,447.6	16.8	229.8	5,645.4	12.3
	1971	18	--	4,011.5	17.4	222.9	6,687.1	13.1
	1972	18	--	4,350.0	16.7	241.7	8,085.0	13.8
	1973	21	--	5,165.0	17.4	245.9	9,991.0	14.7
Total								
	1968	49,295	100.0	16,718.7	100.0	0.34	38,541.7	100.0
	1969	53,424	100.0	17,828.4	100.0	0.33	41,117.2	100.0
	1970	57,171	100.0	20,554.6	100.0	0.36	45,842.2	100.0
	1971	58,950	100.0	23,097.7	100.0	0.39	50,994.7	100.0
	1972	62,737	100.0	26,018.0	100.0	0.41	58,735.0	100.0
	1973	67,957	100.0	29,642.0	100.0	0.44	68,035.0	100.0

Table 5 continued

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Average Assets $M	Sales $M	Sales Percent
FINANCE								
Under 1								
	1968	59,501	93.2	8,211.7	9.1	0.14	1,822.4	21.9
	1969	64,825	93.0	9,202.5	8.9	0.14	2,088.4	21.0
	1970	70,179	93.0	9,799.7	8.6	0.14	2,080.2	18.6
	1971	73,038	92.8	10,200.6	8.1	0.14	2,275.6	19.0
	1972	65,751	91.4	10,584.0	7.2	0.16	2,680.0	19.4
	1973	71,878	91.6	10,989.0	6.4	0.15	4,219.0	22.7
1-10								
	1968	3,782	5.9	9,650.6	10.7	2.5	1,239.2	14.9
	1969	4,257	6.1	10,876.2	10.6	2.5	1,391.1	14.0
	1970	4,597	6.1	11,901.6	10.5	2.5	1,511.0	13.5
	1971	4,929	6.3	12,779.3	10.1	2.6	1,752.0	14.6
	1972	5,354	7.4	13,978.0	9.5	2.6	1,913.0	13.9
	1973	5,674	7.2	14,912.0	8.6	2.6	2,427.0	13.1
10-100								
	1968	455	0.7	13,631.9	15.1	30.0	1,131.1	13.6
	1969	515	0.7	14,423.9	14.0	28.0	1,247.6	12.6
	1970	564	0.7	15,933.2	14.0	28.2	1,454.5	13.0
	1971	613	0.8	16,509.0	13.1	26.9	1,583.8	13.2
	1972	740	1.0	20,494.0	13.9	27.7	1,855.0	13.5
	1973	803	1.0	21,511.0	12.5	26.8	2,250.0	12.1
100 and over								
	1968	84	0.1	58,909.7	65.2	701.3	4,121.6	49.6
	1969	94	0.1	68,371.7	66.5	727.3	5,212.7	52.4
	1970	97	0.1	75,948.5	66.9	783.0	6,139.1	54.9
	1971	108	0.1	86,807.5	68.7	803.8	6,358.3	53.1
	1972	121	0.2	101,890.0	69.3	842.0	7,334.0	53.2
	1973	152	0.2	125,056.0	72.5	822.7	9,694.0	51.8
Total								
	1968	63,822	100.0	90,403.8	100.0	1.4	8,314.3	100.0
	1969	69,691	100.0	102,874.3	100.0	1.5	9,939.8	100.0
	1970	75,437	100.0	113,583.0	100.0	1.5	11,184.8	100.0
	1971	78,688	100.0	126,296.4	100.0	1.6	11,969.6	100.0
	1972	71,966	100.0	146,946.0	100.0	2.0	13,782.0	100.0
	1973	78,507	100.0	172,468.0	100.0	2.2	18,590.0	100.0

Table 5 continued

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Average Assets $M	Sales $M	Sales Percent
SERVICES								
Under 1								
	1968	24,267	97.6	2,513.4	52.7	0.10	2,708.6	73.7
	1969	26,043	97.3	2,796.5	50.1	0.11	2,930.6	71.3
	1970	27,865	97.2	2,937.6	47.6	0.10	3,179.5	68.9
	1971	29,855	97.0	3,244.1	46.6	0.11	3,688.4	69.2
	1972	33,360	96.6	3,745.0	43.0	0.11	4,143.0	65.0
	1973	37,217	96.6	4,165.0	40.6	0.11	4,519.0	63.0
1-10								
	1968	556	2.2	1,272.4	26.7	2.3	634.3	17.3
	1969	661	2.5	1,536.8	27.5	2.3	790.0	19.2
	1970	740	2.6	1,794.6	29.1	2.4	986.0	21.4
	1971	860	2.8	2,083.9	29.9	2.4	1,188.0	22.3
	1972	1,085	3.1	2,678.0	30.7	2.5	1,635.0	25.7
	1973	1,210	3.1	2,980.0	29.1	2.5	1,792.0	25.0
10-100								
	1968	34	0.1	850.0[a]	17.8	25.0	315.0[a]	8.6
	1969	51	0.2	1,245.8	22.3	24.4	388.6	9.5
	1970	59	0.2	1,441.7	23.3	24.4	448.2	9.7
	1971	68	0.2	1,633.8	23.5	24.0	449.2	8.4
	1972	84	0.2	2,065.0[a]	23.7	24.6	575.0[a]	9.0
	1973	107	0.3	2,735.0[a]	26.7	25.6	810.0[a]	11.3
100 and over								
	1968	1	--	130.0[a]	2.7	130.0	15.0[a]	0.4
	1969	-	-	-	-	-	-	-
	1970	-	-	-	-	-	-	-
	1971	-	-	-	-	-	-	-
	1972	2	--	230.0[a]	2.6	115.0	20.0[a]	0.3
	1973	3	--	375.0[a]	3.6	125.0	125.0[a]	1.7
Total[b]								
	1968	24,858	100.0	4,764.9	100.0	0.19	3,673.4	100.0
	1969	26,755	100.0	5,579.9	100.0	0.21	4,109.4	100.0
	1970	28,664	100.0	6,173.9	100.0	0.21	4,613.7	100.0
	1971	30,783	100.0	6,961.9	100.0	0.23	5,325.7	100.0
	1972	34,531	100.0	8,714.0	100.0	0.25	6,370.0	100.0
	1973	38,537	100.0	10,254.0	100.0	0.27	7,175.0	100.0

Table 5 continued

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Average Assets $M	Sales $M	Sales Percent
ALL INDUSTRIES[b]								
Under 1								
	1968	180,662	93.7	25,041.0	13.2	0.14	32,866.0	30.0
	1969	193,874	93.5	27,605.7	13.0	0.14	35,678.0	29.8
	1970	208,071	93.4	29,138.0	11.6	0.14	37,205.6	28.1
	1971	215,528	93.1	30,734.0	11.2	0.14	39,447.6	27.0
	1972	218,778	92.5	32,885.0	10.6	0.15	44,058.0	26.8
	1973	239,219	92.5	35,483.0	10.0	0.15	47,501.0	24.3
1-10								
	1968	10,556	5.5	27,318.9	14.3	2.6	26,981.6	24.6
	1969	11,836	5.7	30,814.9	14.5	2.6	29,388.3	24.5
	1970	12,850	5.8	33,885.7	13.5	2.6	32,142.4	24.2
	1971	13,960	6.0	36,686.5	13.3	2.6	35,704.9	24.4
	1972	15,350	6.5	40,826.0	13.2	2.7	40,392.0	24.5
	1973	16,689	6.5	44,281.0	12.4	2.7	46,732.0	23.9
10-100								
	1968	1,324	0.7	38,377.0	20.2	29.0	23,057.0	21.0
	1969	1,482	0.7	41,804.0	19.7	28.2	26,004.1	21.7
	1970	1,652	0.7	46,609.9	18.6	28.2	28,469.0	21.5
	1971	1,757	0.8	49,015.5	17.8	27.9	30,757.1	21.0
	1972	1,985	0.8	55,576.0	17.9	28.0	34,236.0	20.8
	1973	2,220	0.8	60,961.0	17.1	27.5	44,870.0	23.0
100 and over								
	1968	212	0.1	99,377.9	52.3	468.8	26,663.0	24.3
	1969	230	0.1	111,990.2	52.8	486.9	28,789.6	24.0
	1970	262	0.1	140,739.6	56.2	537.2	34,702.3	26.2
	1971	291	0.1	158,977.3	57.7	546.3	40,270.4	27.5
	1972	315	0.1	181,106.0	58.3	574.9	45,901.0	27.9
	1973	369	0.1	215,456.0	60.5	583.9	56,200.0	28.8
Total								
	1968	192,754	100.0	190,114.9	100.0	0.99	109,567.5	100.0
	1969	207,422	100.0	212,214.7	100.0	1.0	119,859.7	100.0
	1970	222,835	100.0	250,373.2	100.0	1.1	132,519.3	100.0
	1971	231,536	100.0	275,413.8	100.0	1.2	145,764.4	100.0
	1972	236,428	100.0	310,393.0	100.0	1.3	164,587.0	100.0
	1973	258,497	100.0	356,181.0	100.0	1.4	195,303.0	100.0

Table 5 continued

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Average Assets $M	Sales $M	Sales Percent
ALL NON-FINANCIAL INDUSTRIES[b]								
Under 1								
	1968	121,161	94.0	16,829.3	16.9	0.14	32,318.7	29.9
	1969	129,049	93.7	18,403.2	16.8	0.14	34,856.5	29.5
	1970	137,892	93.5	19,338.3	14.1	0.14	36,553.9	27.9
	1971	142,490	93.2	20,533.4	13.8	0.14	38,744.2	26.9
	1972	153,027	93.0	22,301.0	13.6	0.15	43,029.0	26.6
	1973	167,341	93.0	24,494.0	13.3	0.15	45,886.0	24.0
1-10								
	1968	6,774	5.2	17,668.3	17.7	2.6	26,647.5	24.6
	1969	7,579	5.5	19,938.7	18.2	2.6	29,037.5	24.6
	1970	8,253	5.6	21,984.1	16.1	2.7	31,773.3	24.3
	1971	9,031	5.9	23,907.2	16.0	2.6	35,265.3	24.4
	1972	9,996	6.1	26,848.0	16.4	2.7	39,854.0	24.6
	1973	11,015	6.1	29,369.0	16.0	2.7	46,036.0	24.0
10-100								
	1968	869	0.7	24,745.1	24.8	28.5	22,895.7	21.2
	1969	967	0.7	27,380.1	25.0	28.3	25,797.6	21.9
	1970	1,088	0.7	30,676.7	22.4	28.1	28,264.0	21.6
	1971	1,144	0.7	32,506.5	21.8	28.4	30,466.0	21.1
	1972	1,245	0.8	35,082.0	21.5	28.2	33,857.0	20.9
	1973	1,417	0.8	39,450.0	21.5	27.8	44,305.0	23.1
100 and over								
	1968	128	0.1	40,468.2	40.6	316.1	26,304.5	24.3
	1969	136	0.1	43,618.5	39.9	320.7	28,339.4	24.0
	1970	165	0.1	64,791.1	47.4	392.7	34,253.7	26.2
	1971	183	0.1	72,169.8	48.4	394.4	39,741.9	27.5
	1972	194	0.1	79,216.0	48.5	408.3	45,217.0	27.9
	1973	217	0.1	90,400.0	49.2	416.6	55,331.0	28.9
Total								
	1968	128,932	100.0	99,711.1	100.0	0.77	108,166.3	100.0
	1969	137,731	100.0	109,340.4	100.0	0.79	118,031.1	100.0
	1970	147,398	100.0	136,790.2	100.0	0.93	130,844.9	100.0
	1971	152,848	100.0	149,117.4	100.0	0.98	143,801.8	100.0
	1972	164,462	100.0	163,447.0	100.0	0.99	161,957.0	100.0
	1973	179,990	100.0	183,713.0	100.0	1.02	191,558.0	100.0

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a) Author's estimates and/or rounded figures.
b) Totals may not add because of estimates and/or roundings.

Sources: Statistics Canada [60]; figures for 1972 and 1973 were communicated by the Business Finance Division. Some figures are own estimates, as indicated.

Table 6. Inequality in the Distribution of Assets and Sales as Measured by the Gini Ratio for Various Divisions of the Canadian Economy, by Asset Size of Corporations, 1968-1973

Year	Assets	Percent Change	Sales	Percent Change
AGRICULTURE/FORESTRY/FISHING				
1968	0.2267		0.1232	
1969	0.2338	1.7	0.1162	-2.1
1970	0.2121	-5.1	0.1308	4.5
1971	0.2099	-0.5	0.1300	-0.2
1972	0.1677	-10.4	0.1408	3.2
1973	0.1725	1.3	0.1664	7.4
1968/1973	-	-12.9	-	13.1
MINING				
1968	0.7514		0.7985	
1969	0.7497	-0.4	0.7680	-7.3
1970	0.7527	0.7	0.7949	6.4
1971	0.7692	3.8	0.7909	-1.0
1972	0.7775	2.0	0.7977	1.7
1973	0.7981	4.9	0.8205	5.7
1968/1973	-	10.8	-	5.5
MANUFACTURING				
1968	0.6703		0.5717	
1969	0.6714	0.2	0.5818	2.0
1970	0.6754	0.8	0.5826	0.2
1971	0.6905	3.2	0.5998	3.5
1972	0.6881	-0.5	0.6091	1.9
1973	0.7020	3.0	0.6282	3.9
1968/1973	-	6.7	-	11.4
CONSTRUCTION				
1968	0.3014		0.1989	
1969[a]	0.4150	24.8	0.3053	26.6
1970	0.3056	-22.2	0.2084	-21.0
1971	0.3135	1.7	0.2100	0.4
1972	0.3154	0.4	0.1983	-2.9
1973	0.3149	-0.1	0.1977	-0.1
1968/1973	-	2.9	-	-0.3
UTILITIES				
1968	0.8631		0.6608	
1969	0.8627	-0.1	0.6631	0.5
1970	0.9061	12.6	0.7189	11.8
1971	0.9079	0.6	0.7212	0.5
1972	0.9081	0.07	0.7257	1.0
1973	0.9131	1.7	0.7338	1.8
1968/1973	-	14.5	-	15.4

Table 6 continued

Year	Assets	Percent Change	Sales	Percent Change
TRADE				
1968	0.3564		0.3113	
1969	0.3365	-4.1	0.2979	-2.9
1970	0.3833	9.9	0.3292	6.8
1971	0.3992	3.3	0.3408	2.5
1972	0.4018	0.5	0.3522	2.4
1973	0.4086	1.4	0.3763	5.0
1968/1973	-	10.9	-	14.0
FINANCE				
1968	0.7761		0.6265	
1969	0.7879	2.8	0.6389	2.6
1970	0.7797	-2.0	0.6718	6.8
1971	0.8026	5.5	0.6594	-2.6
1972	0.8121	-2.3	0.6569	-0.5
1973	0.8487	9.4	0.6334	-4.9
1968/1973	-	17.4	-	1.4
SERVICES				
1968	0.3121		0.1616	
1969	0.3521	8.6	0.1791	4.7
1970	0.3690	3.5	0.1919	3.3
1971	0.3745	1.1	0.1834	-2.2
1972[b]	0.2772	-20.1	0.1377	-11.8
1973	0.3027	5.7	0.1552	5.1
1968/1973	-	-2.0	-	-1.7
ALL INDUSTRIES				
1968	0.6981		0.4529	
1969	0.7013	0.7	0.4528	-0.02
1970	0.7077	1.4	0.4728	4.0
1971	0.7330	5.6	0.4837	2.2
1972	0.7388	1.3	0.4844	0.1
1973	0.7532	3.2	0.5067	4.5
1968/1973	-	12.0	-	10.8
ALL NON-FINANCIAL INDUSTRIES				
1968	0.6370		0.4538	
1969	0.6182	-3.9	0.4549	0.2
1970	0.6686	10.4	0.4737	3.8
1971	0.6741	1.2	0.4844	2.1
1972	0.6743	0.04	0.4866	0.4
1973	0.6801	1.2	0.5099	4.7
1968/1973	-	9.0	-	11.3

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a) Inequality in 1969 changed dramatically because there was no corporation in the highest size class.
b) Inequality in 1972 changed dramatically since corporations entered the highest size class.

Source: Table 5.

Table 7. The Largest Corporations in Various Divisions of the Canadian Economy, by Asset Size Groups, 1965, 1968, and 1973[a]

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Sales $M	Sales Percent
MINING							
100-500	1965	16	0.4	3,377.6	37.1	1,430.7	44.2
	1968	27	0.7	5,700.0[b]	42.9	2,150.0[b]	44.8
	1973	36	0.9	7,650.0[b]	37.3	4,100.0[b]	45.2
500-1,000	1965	-	-	-	-	-	-
	1968	-	-	-	-	-	-
	1973	4	0.1	2,730.0[b]	13.3	770.0[b]	8.5
1,000 and over	1965	-	-	-	-	-	-
	1968	1	--	1,200.0[b]	9.0	870.0[b]	18.1
	1973	1	--	1,950.0[b]	9.5	970.0[b]	10.7
Total	1965	3,857	100.0	9,091.4	100.0	3,235.2	100.0
	1968	3,668	100.0	13,287.2	100.0	4,796.4	100.0
	1973	3,924	100.0	20,502.7	100.0	9,072.0	100.0
MANUFACTURING							
100-500	1965	45	0.2	8,350.0[b]	25.8	8,550.0[b]	23.0
	1968	56	0.3	10,891.0	26.8	9,368.9	20.2
	1973	86	0.3	17,241.1	28.6	16,129.9	20.9
500-1,000	1965	6	0.03	4,700.0[b]	14.5	3,430.0[b]	9.2
	1968	6	0.03	4,050.0[b]	10.0	4,600.0[b]	9.9
	1973	7	0.03	4,800.0[b]	8.0	7,800.0[b]	10.1
1,000 and over	1965	-	-	-	-	-	-
	1968	2	--	2,200.0[b]	5.4	1,550.0[b]	3.3
	1973	5	--	6,500.0[b]	10.8	5,840.0[b]	7.6
Total	1965	21,501	100.0	32,307.7	100.0	37,132.6	100.0
	1968	20,768	100.0	40,652.8	100.0	46,402.5	100.0
	1973	24,218	100.0	60,157.9	100.0	77,078.0	100.0
CONSTRUCTION							
100-500	1965	1	--	105.0[b]	2.9	65.0[b]	1.1
	1968	1	--	120.0[b]	2.3	20.0[b]	0.2
	1973	2	--	350.0[b]	3.8	170.0[b]	1.3
500-1,000	1965	-	-	-	-	-	-
	1968	-	-	-	-	-	-
	1973	-	-	-	-	-	-
1,000 and over	1965	-	-	-	-	-	-
	1968	-	-	-	-	-	-
	1973	-	-	-	-	-	-
Total	1965	15,331	100.0	3,591.0	100.0	5,899.0	100.0
	1968	17,693	100.0	5,222.6	100.0	8,263.3	100.0
	1973	26,086	100.0	9,275.2	100.0	12,850.5	100.0

Table 7 continued

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Sales $M	Sales Percent
UTILITIES							
100-500	1965	11	0.1	2,450.0[b]	15.5	995.0[b]	17.3
	1968	15	0.2	2,942.1	15.5	885.4	12.1
	1973	33	0.3	7,220.0[b]	14.0	2,000.0[b]	12.4
500-1,000	1965	2	--	1,050.0[b]	6.6	155.0[b]	2.7
	1968	4	--	2,330.0[b]	12.3	740.0[b]	10.1
	1973	11	0.1	8,230.0[b]	15.9	1,835.0[b]	11.3
1,000 and over	1965	3	--	7,950.0[b]	50.4	1,835.0[b]	32.0
	1968	3	--	9,090.0[b]	47.9	1,990.0[b]	27.2
	1973	8	--	28,183.1	54.5	5,842.1	36.1
Total	1965	7,111	100.0	15,784.2	100.0	5,737.2	100.0
	1968	7,265	100.0	18,984.5	100.0	7,319.3	100.0
	1973	10,756	100.0	51,682.1	100.0	16,172.3	100.0
TRADE							
100-500	1965	10	--	1,364.8	10.9	3,417.0	11.4
	1968	14	--	2,047.7	12.6	4,595.2	11.8
	1973	20	--	4,145.0[b]	14.0	8,910.0[b]	13.0
500-1,000	1965	-	-	-	-	-	-
	1968	-	-	-	-	-	-
	1973	-	-	-	-	-	-
1,000 and over	1965	-	-	-	-	-	-
	1968	-	-	-	-	-	-
	1973	1	--	1,100.0[b]	3.7	1,180.0[b]	1.7
Total	1965	44,726	100.0	12,540.6	100.0	29,863.6	100.0
	1968	49,291	100.0	16,199.6	100.0	38,849.0	100.0
	1973	67,960	100.0	29,646.7	100.0	68,377.8	100.0
FINANCE							
100-500	1965	51	0.1	11,330.1	17.0	818.3	16.8
	1968	64	0.1	13,363.2	14.8	1,071.4	13.4
	1973	117	0.1	23,885.2	13.8	2,004.7	11.4
500-1,000	1965	5	--	2,994.8	4.5	131.8	2.7
	1968	11	--	7,600.0[b]	8.4	240.0[b]	3.0
	1973	18	--	13,703.6	7.9	1,176.0	6.7
1,000 and over	1965	8	--	28,905.0	43.3	1,069.9	21.9
	1968	7	--	37,700.0[b]	41.9	2,690.0[b]	33.7
	1973	14	--	87,467.6	50.7	6,290.0	35.9
Total	1965	46,692	100.0	66,682.1	100.0	4,882.2	100.0
	1968	63,817	100.0	90,061.7	100.0	7,969.8	100.0
	1973	78,504	100.0	172,472.3	100.0	17,536.1	100.0

Table 7 continued

Asset Size $M	Year	Corporations Number	Corporations Percent	Assets $M	Assets Percent	Sales $M	Sales Percent
SERVICES							
100-500	1965	-	-	-	-	-	-
	1968	1	--	130.0[b]	2.7	17.0[b]	0.4
	1973	3	--	380.0[b]	3.7	125.0[b]	1.4
500-1,000	1965	-	-	-	-	-	-
	1968	-	-	-	-	-	-
	1973	-	-	-	-	-	-
1,000 and over	1965	-	-	-	-	-	-
	1968	-	-	-	-	-	-
	1973	-	-	-	-	-	-
Total	1965	21,294	100.0	3,346.1	100.0	2,864.1	100.0
	1968	24,859	100.0	4,848.8	100.0	4,602.9	100.0
	1973	38,540	100.0	10,256.0	100.0	8,737.7	100.0
ALL INDUSTRIES[c]							
100-500	1965	135	--	27,000.3	18.7	15,275.7	16.9
	1968	178	--	35,184.4	18.5	18,128.9	15.2
	1973	297	0.1	60,868.5	17.1	33,535.2	15.8
500-1,000	1965	13	--	8,776.7	6.1	3,716.9	4.1
	1968	21	--	13,983.0	7.3	5,580.7	4.7
	1973	40	--	29,469.2	8.3	11,612.3	5.5
1,000 and over	1965	11	--	36,852.3	25.5	2,905.9	3.2
	1968	13	--	50,210.5	26.4	7,005.7	5.9
	1973	29	--	125,211.7	35.1	20,126.3	9.5
Total	1965	165,259	100.0	144,185.2	100.0	90,271.0	100.0
	1968	192,752	100.0	190,337.6	100.0	119,056.0	100.0
	1973	258,501	100.0	356,217.7	100.0	211,799.5	100.0
NON-FINANCIAL INDUSTRIES[c]							
100-500	1965	84	--	15,670.3	20.2	14,457.5	16.9
	1968	114	--	21,821.2	21.8	17,057.5	15.4
	1973	180	0.1	36,983.3	20.1	31,530.6	16.2
500-1,000	1965	8	--	5,781.9[b]	7.5	3,585.0[b]	4.2
	1968	10	--	6,375.0[b]	6.4	5,340.0[b]	4.8
	1973	22	--	15,765.6	8.6	10,436.2	5.4
1,000 and over	1965	3	-	7,947.2[b]	10.2	1,836.0[b]	2.1
	1968	6	-	12,510.0[b]	12.5	4,310.0[b]	3.9
	1973	15	-	37,744.1	20.5	13,836.3	7.1
Total	1965	118,567	100.0	77,503.1	100.0	85,388.8	100.0
	1968	128,935	100.0	100,275.9	100.0	111,086.2	100.0
	1973	179,997	100.0	183,745.4	100.0	197,263.5	100.0

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a) Agriculture/Forestry/Fishing does not have corporations with assets of $100 M and more.

b) Author's estimates and/or rounded figures.

c) Totals may not add because of estimates and/or roundings.

Source: Special Tabulation, Business Finance Division, Statistics Canada, Ottawa, 1976; some figures are own estimates, as indicated.

Table 8. Number of Major Industrial Groups and Industries in Canadian Manufacturing, Mining, and Logging, 1972

	Forestry (Logging only)	Mining	Manufacturing
Major Industrial Groups (2-digit)	1	5	20
All Industries	3	27	202
of which: 3-digit	1	16	112
4-digit	2	11	90
Industries in Conc. Report (Table 1)	2	19	171
of which: 3-digit	-	9	79
4-digit	2	10	92
Industries with Shipments of $500 M and over: All	2	2	25
3-digit	-	-	16
4-digit	2	2	9
$1 B and over: All	1	-	9
3-digit	-	-	6
4-digit	1	-	3

Sources: Statistics Canada [57, pp.132-136; 58].

Table 9. Overall Concentration in Canada and in the United States: Six Individual Series

1. Share of Total Assets (Less Taxable Investments) Held by the 200 Largest Non-Financial Corporations in the United States

1909	33.3%
1929	47.9%
1933	54.8%

Source: National Resources Committee, The Structure of the American Economy, Pt. 1, 1939, p.107 (adapted from: Blair [9, p.64]).

2. Share of Total Assets Held by the 100 Largest Manufacturing, Mining, and Distribution Corporations in the United States

1909	17.7%	1935	28.0%
1919	16.6%	1948	26.7%
1929	25.5%	1958	29.8%

Source: Collins and Preston [18, p.989].

3. Share of Total Assets Held by the 367 Largest Non-Financial Corporations in the United States

1950	44.7%
1965	47.2%

Source: Berle and Means [6, 1967 e., p. 356].

4. Share of Total Assets Held by All Corporations with Assets of $100 M and over in the United States

1946	49.0%
1965	59.6%

Source: Jacoby [27, repr., p.15].

5. Share of Total Assets Held by All Corporations with Assets of $100 M and over in Canada

1965	50.4%
1973	60.5%

Source: Special Tabulations, Business Finance Division, Statistics Canada, Ottawa, 1976.

6. Share of Total Assets Held by All Non-Financial Corporations with Assets of $100 M and over in Canada

1965	37.9%
1973	49.2%

Source: Special Tabulations, Business Finance Division, Statistics Canada, Ottawa, 1976.

Table 10. Total Assets of All Corporations in the United States, by Asset Size of Corporations, 1965 and 1971

Asset Size $ M	Year	Corporations		Assets	
		Number	Percent	$ M	Percent
Under 1	1965	1,336,850	93.9	171,306.1	9.9
	1971	1,623,192	93.6	217,849.8	7.5
1-10	1965[a]	62,601	4.4	130,154.1	7.6
	1971	90,506	5.2	241,629.3	8.4
10-100	1965[b]	22,628	1.6	394,435.6	22.9
	1971	16,733	1.0	461,453.9	16.0
100 and over	1965	1,901	0.1	1,027,628.5	59.6
	1971	2,901	0.2	1,968,288.4	68.1
TOTAL	1965	1,423,980	100.0	1,723,524.4	100.0
	1971	1,733,332	100.0	2,889,221.5	100.0

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a) 1-5.
b) 5-100.

Sources: United States [67, 1965 e., p.33; 67, 1971 e., p.32].

Table 11. Share of Manufacturing Assets Held by the 50, 100, and 200 Largest Corporations in the United States, 1925-1973

Year	50 Largest	100 Largest	200 Largest
1925	..	36.1	..
1927	..	36.0	..
1929	..	39.7	47.7
1931	..	43.4	50.9
1933	..	44.2	51.4
1935	..	42.3	49.6
1937	..	43.7	50.9
1939	..	43.5	50.5
1941[a]	..	39.6	46.7
1947	31	39.3	47.2
1948	..	40.3	48.3
1949	..	41.1	49.0
1950	..	39.8	47.7
1951	..	39.4	47.7
1952	..	40.6	49.2
1953	..	41.7	50.3
1954	33	43.3	52.1
1955	..	44.3	53.1
1956	..	45.0	54.1
1957	..	46.3	55.6
1958	37	47.1	56.6
1959	..	46.3	56.0
1960	..	46.4	56.3
1961	..	46.6	56.3
1962	..	46.2	56.0
1963	37	46.5	56.3
1964	..	46.5	56.6
1965	..	46.5	56.7
1966	..	46.4	56.7
1967	38	48.1	59.3
1968	..	49.3	60.9
1969	..	48.6	60.7
1970	..	48.9	61.0
1971	37	49.3	61.6
1972	..	48.0	60.6
1973	..	47.6	60.3

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a) Data are not available for the years between 1941 and 1947 because some large corporations did not publish balance sheets for reasons of wartime security.

Sources: 50 Largest: Bock and Farkas [10, repr., p.39].
100 and 200 Largest: United States [68, p.173]; Penn [43].

Table 12. Share of Total Value Added by Manufacture Accounted for by the 50, 100, and 200 Largest Manufacturing Companies in the United States, 1947-1972

Year	50 Largest	100 Largest	200 Largest
1947	17	23	30
1954	23	30	37
1958	23	30	38
1962	24	32	40
1963	25	33	41
1966	25	33	42
1967	25	33	42
1970	24	33	43
1972	25	33	43

Source: United States [66, p.4].

Appendix

Classes of the 1960 Standard Industrial Classification

CODE		TITLE
	001-021	AGRICULTURE
001		Experimental and University Farms
003		Institutional Farms
006		Residential and Other Small Holdings
011		Livestock and Livestock Combination Farms
013		Field Crop and Field Crop Combination Farms
015		Fruit and Vegetable Farms
017		Other Crop and Livestock Combination Farms
019		Miscellaneous Specialty Farms
021		Services Incidental to Agriculture
	031-039	FORESTRY
031		Logging
039		Forestry Services
	041-047	FISHING AND TRAPPING
041		Fishing
045		Fishery Services
047		Hunting & Trapping
	051-099	MINING
051		Placer Gold Mines
052		Gold Quartz Mines
053		Copper-Gold-Silver Mines
054		Nickel-Copper Mines
055		Silver-Cobalt Mines
056		Silver-Lead-Zinc Mines
057		Uranium Mines
058		Iron Mines
059		Other Metal Mines
061		Coal Mines
064		Petroleum and Gas Wells
071		Asbestos Mines
073		Gypsum Mines

CODE	TITLE
077	Salt Mines
079	Other Non-Metal Mines
083	Stone Quarries
087	Sand Pits or Quarries
092	Petroleum Prospecting
094	Other Prospecting
096	Contract Drilling for Petroleum
098	Other Contract Drilling
099	Other Services Incidental to Mining
101-399	MANUFACTURING
101	Slaughtering and Meat Processors
103	Poultry Processors
105	Dairy Factories
107	Process Cheese Manufacturers
111	Fish Products Industry
112	Fruit and Vegetable Canners and Processors
123	Feed Manufacturers
124	Flour Mills
125	Breakfast Cereal Manufacturers
128	Biscuit Manufacturers
129	Bakeries
131	Confectionery Manufacturers
133	Sugar Refineries
135	Vegetable Oil Mills
139	Miscellaneous Food Industries
141	Soft Drink Manufacturers
143	Distilleries
145	Breweries
147	Wineries
151	Leaf Tobacco Processing
153	Tobacco Products Manufacturers
161	Rubber Footwear Manufacturers
163	Tire & Tube Manufacturers
169	Other Rubber Industries
172	Leather Tanneries
174	Shoe Factories
175	Leather Glove Factories
179	Luggage, Handbag and Small Leather Goods Manufacturers
183	Cotton Yarn & Cloth Mills
193	Wool Yarn Mills
197	Wool Cloth Mills
201	Synthetic Textile Mills
211	Fibre Preparing Mills
212	Thread Mills
213	Cordage & Twine Industries

CODE	TITLE
214	Narrow Fabric Mills
215	Pressed and Punched Felt Mills
216	Carpet, Mat & Rug Industries
218	Textile Dyeing & Finish
219	Lino & Coated Fabrics
221	Canvas Products Industries
223	Cotton & Jute Bag Industries
229	Miscellaneous Textiles Industries
231	Hosiery Mills
239	Other Knitting Mills
243	Men's Clothing Industries
244	Women's Clothing Industries
245	Children's Clothing Industries
246	Fur Goods Industry
247	Hat & Cap Industries
248	Foundation Garment Industries
249	Other Clothing Industries
251	Sawmills
252	Veneer and Plywood Mills
254	Sash & Door & Planing
256	Wooden Box Factories
258	Coffin & Casket Industries
259	Miscellaneous Wood Industries
261	Household Furniture Industries
264	Office Furniture Industries
266	Other Furniture Industries
268	Electric Lamp & Shade Industries
271	Pulp & Paper Mills
272	Asphalt Roofing
273	Paper Box & Bag Manufacturers
274	Other Paper Converters
286	Commercial Printing
287	Engraving, Stereotyping & Ald.
288	Publishing Only
289	Printing & Publishing
291	Iron & Steel Mills
292	Steel Pipe & Tube Mills
294	Iron Foundries
295	Smelting & Refining
296	Aluminum Rolling, Casting and Extruding
297	Copper and Alloy Rolling, Casting & Extruding
298	Metal Rolling, Casting and Extruding, n.e.s.
301	Boiler & Plate Works
302	Fabricated Structural Metal Industry
303	Ornamental and Architectural Metal Industry
304	Metal Stamping, Pressing and Coating Industry
305	Wire & Wire Products Manufacturers
306	Hardware, Tool & Cutlery Manufacturers

CODE	TITLE
307	Heating Equipment Manufacturers
308	Machine Shops
309	Miscellaneous Metal Fabricating Industries
311	Agricultural Implement Industries
315	Miscellaneous Machinery & Equipment Manufacturers
316	Commercial Refrigeration and Air Conditioning Equipment Manufacturers
318	Office & Store Machinery Manufacturers
321	Aircraft and Aircraft Parts Manufacturers
323	Motor Vehicle Manufacturers
324	Truck Body & Trailer Manufacturers
325	Motor Vehicle Parts and Accessories
326	Railroad Rolling Stock Industry
327	Shipbuilding and Repair
328	Boatbuilding & Repair
329	Miscellaneous Vehicle Manufacturers
331	Manufacturers of Small Electrical Appliances
332	Manufacturers of Major Appliances
334	Manufacturers of Household Radio & Television Receivers
335	Communications Equipment Manufacturers
336	Manufacturers of Electrical Industrial Equipment
337	Battery Manufacturers
338	Manufacturers of Electric Wire and Cable
339	Manufacturers of Miscellaneous Electrical Products
341	Cement Manufacturers
343	Lime Manufacturers
345	Gypsum Products Manufacturers
347	Concrete Products Manufacturers
348	Ready-Mix Concrete Manufacturers
351	Clay Products Manufacturers
352	Refractories Manufacturers
353	Stone Products Manufacturers
354	Mineral Wool Manufacturers
355	Asbestos Products Manufacturers
356	Glass & Glass Products Manufacturers
357	Abrasives Manufacturers
359	Other Non-Metallic Mineral Products
365	Petroleum Refineries
369	Other Petroleum & Coal Products
371	Explosives & Ammunition Manufacturers
372	Manufacturers of Mixed Fertilizers
373	Manufacturers of Plastics and Synthetic Resins
374	Manufacturers of Pharmaceuticals and Medicines
375	Paint & Varnish Manufacturers
376	Manufacturers of Soap and Cleaning Compounds
377	Manufacturers of Toilet Preparations

CODE	TITLE
378	Manufacturers of Industrial Chemicals
379	Other Chemical Industries
381	Scientific and Professional Equipment Industries
382	Jewellery and Silverware Manufacturers
383	Broom, Brush & Mop Industries
384	Venetian Blind Manufacturers
385	Plastic Fabricators, n.e.s.
393	Sporting Goods & Toy Industries
395	Fur Dressing & Dye Industries
397	Signs & Displays Industries
399	Miscellaneous Manufacturing Industries, n.e.s.
404-421	CONSTRUCTION
404	Building Construction
406	Highway, Bridge & Street Construction
409	Other Construction
421	Special Trade Contractors
501-579	UTILITIES
501	Air Transport
502	Services Incidental to Air Transport
504	Water Transport
505	Services Incidental to Water Transport
506	Railway Transport
507	Truck Transport
508	Bus Transport, Interurban and Rural
509	Urban Transit Systems
512	Taxicab Operations
515	Pipeline Transport
516	Highway and Bridge Maintenance
517	Other Services Incidental to Transportation
519	Other Transportation
524	Grain Elevators
527	Other Storage and Warehousing
543	Radio & Television Broadcasting
544	Telephone Systems
545	Telegraph and Cable Systems
548	Post Office
572	Electric Power
574	Gas Distribution
576	Water Systems
579	Other Utilities

CODE	TITLE
602-699	TRADE
602	Wholesalers of Livestock
604	Wholesalers of Grain
606	Wholesalers of Coal & Coke
608	Wholesalers of Petroleum Products
611	Wholesalers of Paper and Paper Products
613	Wholesalers of General Merchandise
614	Wholesalers of Food
615	Wholesalers of Tobacco Products
616	Wholesalers of Drugs & Toilet Preparations
617	Wholesalers of Apparel and Dry Goods
618	Wholesalers of Furnishings and Household Furniture
619	Wholesalers of Motor Vehicles and Accessories
621	Wholesalers of Electrical Machinery, Equipment and Supplies
622	Wholesalers of Farm Machinery Equipment
623	Wholesalers of Machinery and Equipment
624	Wholesalers of Hardware, Plumbing and Heating
625	Wholesalers of Metal Products
626	Wholesalers of Lumber and Building Materials
627	Wholesalers of Scrap and Waste Materials
629	Wholesalers, n.e.s.
631	Food Stores
642	Department Stores
647	Variety Stores
649	Other General Merchandise Stores
652	Accessories, Parts, Tire & Battery Stores
654	Gasoline Service Stations
656	Motor Vehicles Dealers
658	Motor Vehicle Repair Shop
663	Shoe Stores
665	Men's Clothing Stores
667	Women's Ready-to-Wear Stores
669	Clothing and Dry Goods Stores
673	Hardware Stores
676	Household Furniture and Appliance Stores
678	Radio, Television & Electric Appliance Repair Shops
681	Drug Stores
691	Book & Stationery Stores
692	Florists Shops
693	Fuel Dealers
694	Jewellery Stores
695	Watch & Jewellery Repair Shop
696	Liquor, Wine & Beer Stores
697	Tobacconists
699	Retail Stores, n.e.s.

CODE	TITLE
711-793	FINANCE
711*	Bank of Canada
712	Chartered Banks
713	Quebec Savings Banks
714	Trust Companies
715	Mortgage Loan Companies, etc.
716*	Credit Unions
717*	Caisses Populaires
718	Savings Banks, n.e.s.
721	Export Finance
723	Sales Finance Companies
725	Consumer Loan Companies
727	Business Financing Companies
729	Other Credit Agencies
741	Security Brokers, etc.
751	Open End Funds
752	Closed End Funds
756	Holding & Holding Mortgage
763*	Government Investment Funds
765*	Foreign Business Corporations
769	Other Financial Agencies
771*	Life Insurance Carriers
772*	Non-Life Insurance Carriers
775*	Trusteed Pension Funds
776*	Government Pension Funds
781	Insurance & Real Estate Agencies
791	Real Estate Operators & Lessors
793	Real Estate Developers
801-991	SERVICES
801	Elementary and Secondary Schools
803	Vocational Schools
805	Universities & Colleges
807	Libraries, Museums, etc.
809	Education and Related Services
821	Hospitals
823	Offices of Physicians
825	Offices of Dentists
827	Other Health Services
828	Welfare Organizations
831	Religious Organizations
851	Motion Picture Theatres & Film Entertainment
853	Bowling Alleys and Billiard Parlours
859	Other Recreational Services

CODE	TITLE
861	Accountancy Service
862	Advertising Service
864	Engineering and Scientific Service
866	Legal Service
869	Other Services to Business Management
871	Shoe Repair Shops
872	Barber & Beauty Shops
873	Private Households
874	Laundries, Cleaners, and Pressers
875	Hotels, Restaurants, & Taverns
876	Lodging Houses & Residential Clubs
877	Funeral Directors
878	Dressmaking
879	Other Personal Services
891	Labour Organizations and Trade Associations
893	Photography
894	Blacksmithing and Welding Shop
896	Miscellaneous Repair Shops
897	Service to Buildings and Dwellings
899	Other Miscellaneous Services
902*	Defence Services
909*	Other Federal Administration
931*	Provincial Administration
951*	Local Administration
987*	Undefined & Unspecified
991*	Other Government Offices

*Excluded in 'Corporation Financial Statistics'.

Taken from: Working Document, Business Finance Division, Statistics Canada, Ottawa (by kind permission).

1970 Revision of the Standard Industrial Classification

(Manufacturing Industries)

CODE	TITLE
10	FOOD AND BEVERAGE INDUSTRIES
101	Meat and poultry products industries
1011	Slaughtering and meat processors
1012	Poultry processors
102	Fish products industry
103	Fruit and vegetable processing industries
1031	Fruit and vegetable canners and preservers
1032	Frozen fruit and vegetable processors
104	Dairy products industry
105	Flour and breakfast cereal products industry
106	Feed industry
107	Bakery products industries
1071	Biscuit manufacturers
1072	Bakeries
108	Miscellaneous food industries
1081	Confectionery manufacturers
1082	Cane and beet sugar processors
1083	Vegetable oil mills
1089	Miscellaneous food processors, n.e.s.
109	Beverage industries
1091	Soft drink manufacturers
1092	Distilleries
1093	Breweries
1094	Wineries
15	TOBACCO PRODUCTS INDUSTRIES
151	Leaf tobacco processors
153	Tobacco products manufacturers
16	RUBBER AND PLASTICS PRODUCTS INDUSTRIES
162	Rubber products industries
1623	Tire and tube manufacturers
1624	Rubber footwear manufacturers
1629	Miscellaneous rubber products manufacturers
165	Plastics fabricating industry, n.e.s.

CODE	TITLE
17	LEATHER INDUSTRIES
172	Leather tanneries
174	Shoe factories
175	Leather glove factories
179	Luggage, handbag and small leather goods manufacturers
1792	Boot and shoe findings manufacturers
1799	Miscellaneous leather products manufacturers
18	TEXTILE INDUSTRIES
181	Cotton yarn and cloth mills
182	Wool yarn and cloth mills
183	Man-made fibre, yarn and cloth mills
1831	Fibre and filament yarn manufacturers
1832	Throwsters, spun yarn and cloth mills
184	Cordage and twine industry
185	Felt and fibre processing mills
1851	Fibre processing mills
1852	Pressed and punched felt mills
186	Carpet, mat and rug industry
187	Canvas products and cotton and jute bags industries
1871	Cotton and jute bags manufacturers
1872	Canvas products manufacturers
188	Automobile fabric accessories industry
189	Miscellaneous textile industries
1891	Thread mills
1892	Narrow fabric mills
1893	Embroidery, pleating and hemstitching manufacturers
1894	Textile dyeing and finishing plants
1899	Miscellaneous textile industries, n.e.s.
23	KNITTING MILLS
231	Hosiery mills
239	Knitting mills (except hosiery mills)
2391	Knitted fabric manufacturers
2392	Other knitting mills
24	CLOTHING INDUSTRIES
243	Men's clothing industries
2431	Men's clothing factories

CODE	TITLE
2432	Men's clothing contractors
244	Women's clothing industries
2441	Women's clothing factories
2442	Women's clothing contractors
245	Children's clothing industry
246	Fur goods industry
248	Foundation garment industry
249	Miscellaneous clothing industries
2491	Fabric glove manufacturers
2492	Hat and cap industry
2499	Miscellaneous clothing industries, n.e.s.
25	WOOD INDUSTRIES
251	Sawmills, planing mills and shingle mills
2511	Shingle mills
2513	Sawmills and planing mills
252	Veneer and plywood mills
254	Sash, door and other millwork plants
2541	Sash, door and other millwork plants, n.e.s.
2542	Hardwood flooring plants
2543	Manufacturers of pre-fabricated buildings (woodframe construction)
256	Wooden box factories
258	Coffin and casket industry
259	Miscellaneous wood industries
2591	Wood preservation industry
2592	Wood handles and turning industry
2593	Manufacturers of particle board
2599	Miscellaneous wood industries, n.e.s.
26	FURNITURE AND FIXTURE INDUSTRIES
261	Household furniture manufacturers
2611	Furniture re-upholstery and repair shops
2619	Household furniture manufacturers, n.e.s.
264	Office furniture manufacturers
266	Miscellaneous furniture and fixtures manufacturers
268	Electric lamp and shade manufacturers
27	PAPER AND ALLIED INDUSTRIES
271	Pulp and paper mills
272	Asphalt roofing manufacturers

CODE	TITLE
273	Paper box and bag manufacturers
2731	Folding carton and set-up box manufacturers
2732	Corrugated box manufacturers
2733	Paper and plastic bag manufacturers
274	Miscellaneous paper converters
28	PRINTING, PUBLISHING AND ALLIED INDUSTRIES
286	Commercial printing
287	Platemaking, typesetting and trade bindery industry
288	Publishing only
289	Publishing and printing
29	PRIMARY METAL INDUSTRIES
291	Iron and steel mills
292	Steel pipe and tube mills
294	Iron foundries
295	Smelting and refining
296	Aluminum rolling, casting and extruding
297	Copper and copper alloy rolling, casting and extruding
298	Metal rolling, casting and extruding, n.e.s.
30	METAL FABRICATING INDUSTRIES (EXCEPT MACHINERY AND TRANSPORTATION EQUIPMENT INDUSTRIES)
301	Boiler and plate works
302	Fabricated structural metal industry
303	Ornamental and architectural metal industry
3031	Metal door and window manufacturers
3039	Ornamental and architectural metal industry, n.e.s.
304	Metal stamping, pressing and coating industry
3041	Metal coating industry
3042	Metal stamping and pressing industry
305	Wire and wire products manufacturers
306	Hardware, tool and cutlery manufacturers
307	Heating equipment manufacturers
308	Machine shops
309	Miscellaneous metal fabricating industries

CODE	TITLE
31	MACHINERY INDUSTRIES (EXCEPT ELECTRICAL MACHINERY)
311	Agricultural implement industry
315	Miscellaneous machinery and equipment manufacturers
316	Commercial refrigeration and air conditioning equipment manufacturers
318	Office and store machinery manufacturers
32	TRANSPORTATION EQUIPMENT INDUSTRIES
321	Aircraft and aircraft parts manufacturers
323	Motor vehicle manufacturers
324	Truck body and trailer manufacturers
3241	Truck body manufacturers
3242	Non-commercial trailer manufacturers
3243	Commercial trailer manufacturers
325	Motor vehicle parts and accessories manufacturers
326	Railroad rolling stock industry
327	Shipbuilding and repair
328	Boatbuilding and repair
329	Miscellaneous vehicle manufacturers
33	ELECTRICAL PRODUCTS INDUSTRIES
331	Manufacturers of small electrical appliances
332	Manufacturers of major appliances (electric and non-electric)
333	Manufacturers of lighting fixtures
334	Manufacturers of household radio and television receivers
335	Communications equipment manufacturers
336	Manufacturers of electrical industrial equipment
338	Manufacturers of electric wire and cable
339	Manufacturers of miscellaneous electrical products
3391	Battery manufacturers
3399	Manufacturers of miscellaneous electrical products, n.e.s.
35	NON-METALLIC MINERAL PRODUCTS INDUSTRIES
351	Clay products manufacturers
3511	Clay products manufacturers (from domestic clays)
3512	Clay products manufacturers (from imported clays)

CODE	TITLE
352	Cement manufacturers
353	Stone products manufacturers
354	Concrete products manufacturers
3541	Concrete pipe manufacturers
3542	Manufacturers of structural concrete products
3549	Concrete products manufacturers, n.e.s.
355	Ready-mix concrete manufacturers
356	Glass and glass products manufacturers
3561	Glass manufacturers
3562	Glass products manufacturers
357	Abrasives manufacturers
358	Lime manufacturers
359	Miscellaneous non-metallic mineral products industries
3591	Refractories manufacturers
3599	Miscellaneous non-metallic mineral products industries, n.e.s.
36	PETROLEUM AND COAL PRODUCTS INDUSTRIES
365	Petroleum refineries
3651	Petroleum refining
3652	Manufacturers of lubricating oils and greases
369	Miscellaneous petroleum and coal products industries
37	CHEMICAL AND CHEMICAL PRODUCTS INDUSTRIES
372	Manufacturers of mixed fertilizers
373	Manufacturers of plastics and synthetic resins
374	Manufacturers of pharmaceuticals and medicines
375	Paint and varnish manufacturers
376	Manufacturers of soap and cleaning compounds
377	Manufacturers of toilet preparations
378	Manufacturers of industrial chemicals
3781	Manufacturers of pigments and dry colours
3782	Manufacturers of industrial chemicals (inorganic), n.e.s.
3783	Manufacturers of industrial chemicals (organic), n.e.s.
379	Miscellaneous chemical industries
3791	Manufacturers of printing inks
3799	Miscellaneous chemical industries, n.e.s.

CODE	TITLE
39	MISCELLANEOUS MANUFACTURING INDUSTRIES
391	Scientific and professional equipment industries
3911	Instrument and related products manufacturers
3912	Clock and watch manufacturers
3913	Orthopaedic and surgical appliance manufacturers
3914	Ophthalmic goods manufacturers
3915	Dental laboratories
392	Jewellery and silverware industry
393	Sporting goods and toy industries
3931	Sporting goods manufacturers
3932	Toys and games manufacturers
397	Signs and displays industry
399	Miscellaneous manufacturing industries, n.e.s.
3991	Broom, brush and mop manufacturers
3992	Button, buckle and fastener manufacturers
3993	Floor tile, linoleum and coated fabrics manufacturers
3994	Sound recording and musical instrument manufacturers
3995	Stamp and stencil (rubber and metal) manufacturers
3996	Pen and pencil manufacturers
3997	Typewriter supplies manufacturers
3998	Fur dressing and dyeing
3999	Other miscellaneous manufacturing industries

Taken from: Statistics Canada [57, pp.132-136].

Standard Industrial Classification of Logging and Mining Industries

(1970 Edition)

CODE	TITLE
031	LOGGING
0311	Pulpwood logging
0319	Logging, n.e.s.
05	METAL MINES
051	Placer gold mines
052	Gold quartz mines
057	Uranium mines
058	Iron mines
059	Miscellaneous metal mines
0591	Copper-gold-silver mines
0592	Nickel-copper mines
0593	Silver-cobalt mines
0594	Silver-lead-zinc mines
0595	Molybdenum mines
0599	Miscellaneous metal mines, n.e.s.
07	NON-METAL MINES (EXCEPT COAL MINES)
071	Asbestos mines
072	Peat industry
073	Gypsum mines
079	Miscellaneous non-metal mines
0791	Soapstone and talc mines
0792	Feldspar and quartz mines
0793	Salt mines
0794	Potash mines
0799	Miscellaneous non-metal mines, n.e.s.
08	QUARRIES AND SAND PITS
083	Stone quarries
087	Sand pits or quarries

Taken from: Statistics Canada [57, p.132].